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No. 9

WET EXCAVATION OF A SEWER TRENCH

Draining Before Rather Than After Excavation—Surface Water, Ground Water and Quicksand Handled
—Trench at Gary, Ind., Twenty-two Feet Below Water Level

By C. M. RIPLEY.

AT Gary, Ind., where two years ago was prairie is to-day a city of 15,000, with ten miles of paved streets, twenty miles of gas mains, electric light plant, telegraph and telephone service. To complete the list of public services a sewerage system is now nearing completion, which will contain about twenty miles of mains and cost about \$350,000. Several details of this system contain novel features, but one of the most interesting is the method employed by the contractors, Green & Sons, of Chicago, in trenching through a swamp underlaid with so-called quicksand. This trench was approximately 30 feet deep, 22 feet below the level of the ground water. The material excavated is said to be so saturated that an excavation in it one foot deep will take a width of thirty feet. The ground is in several places very low and contains ponds three or four feet deep. These conditions made ordinary methods impossible.

The contractors accordingly adopted a method novel in many respects. The upper eight feet, more or less, down to ground water, were excavated by means of a scraper bucket elevator, the width being made greater than that of the trench proper and no sheeting being used. Following this, a pump and series of connected wells in a double line in the center of the trench were used along 132 feet of the trench to remove the ground water to a depth of something less than sixteen feet. After this the trench was excavated in twenty-two-foot sections, sheeting being driven meantime, to a further depth of six feet. Pump No. 1 was then moved ahead, and two others were set up, connected to wells close to the sheeting on each side, and the excavation was then carried about sixteen feet deeper and the brick sewer built. In Boston and other places the method of drying the soil by numerous pipe wells before excavation has been used, but there are several features of the Gary work which are new, and the work as a whole is, we believe, of greater magnitude than those referred to.

The plant used in this work consisted of one two-yard Page & Schnable drag scraper bucket excavator with 40-horsepower engine; industrial railway, 2,800 feet, with



FIG. 1. BIRD'S EYE VIEW OF SEWER TRENCH

Taken from mast of bucket excavator. Boom and bucket at right. First series of wells, pumps supported by A frames and clam-shell back-filler in center. Gary Steel Mills in background.

twelve side-dump cars; piping as described below, and about 300 well points; three No. 3 Emerson standard vacuum pumps and a No. 1 pump of the same make; a small duplex force pump for jetting down wells, with small boiler for the same; a Lidgerwood pile driver, the boiler of this being used for the small Emerson pump; three horizontal 30-horsepower boilers for the three large Emerson pumps; a one-yard Hayward clamshell bucket for backfilling, and an engine and derrick for the same.

An industrial railway of 2-foot gauge, with wood ties and 12-pound rails, parallels the excavation, and extends for about 2800 feet. This is almost indispensable in carrying materials from the railroad switches and distributing them along the job. Teams of horses and then mules were tried to haul the cars on this track, but owing to the rapid progress of the work—averaging 60 feet a day—and the resulting frequent changes in the work and the tracks, together with the extreme fineness of the sand, which gave a poor footing, it was found that laborers could take these cars where teams could not.

DRAG SCRAPER BUCKET EXCAVATOR

The two yard bucket was hung from a 40-foot boom with the usual cable and chain attachments. It did the surface or preliminary excavation, which ran about 10 yds. per lin. ft. but this method was of course impracticable below ground water level. Some of the material thus excavated was dumped straight ahead in the path of the excavator machine, thus making a roadbed for it across the swamp. The machine was pulled ahead with little loss of time by simply lowering the bucket and letting it get a good "bite" on the ground ahead, when, by winding on the "digging" cable, the whole apparatus moved forward on the rollers. These rollers were then chocked with pieces of angle irons to prevent further motion.

This excavator was timed during two round trips, with the following result:

Time of Day	Operation	Time Elapsed for Each Item, in Secs.
4:22:05	Hoisting full bucket.....	5
4:22:10	Swinging to embankment.....	5
4:22:15	Dumping	5
4:22:20	Swinging back	5
4:22:25	Lowering to trench.....	5
4:22:30	Digging	15
4:22:45	Hoisting full bucket.....	5
4:22:50	Swinging to embankment.....	7
4:22:57	Dumping	5
4:23:02	Swinging back	3
4:23:05	Lowering to trench.....	5
4:23:10	Digging	15
4:23:25	Hoisting	—

Total for 2 round trips..... 80 secs., or 40 seconds per round trip. Since 15 seconds are required for the "digging" movement, it is seen that this one item consumes 38% of the entire time of the excavating machine. The sand on the job might be called "perfectly wet," that is, the voids were entirely filled with water. Its weight therefore can be taken at 33% greater than dry sand, or about 120 lbs. per cu. ft. Thus the 2 yard bucket when full, must contain approximately 2x27x120 lbs., or three tons of sand. This fact will assist us in understanding the slowness of the digging operation.

The average progress per day of the entire sewer work was 60 feet.

Since the bucket excavates a trench about 30 feet wide and 9 or 10 feet deep, its duty per day is about 606 yards, the cost being:

1 engineer	\$5.00
1 fireman	3.00
3 laborers	6.00
Coal	6.25
Total.....	\$20.25

which, divided by 600, gives the unit cost at 3½ cents per cubic yard, not figuring superintendence or depreciation. This machine is not trying to make a record, but is only working fast enough to keep ahead of the rest of the work. In one day, in an emergency, it took out 850 yards.

Fig. 1, taken from the top of the mast of this excavator, shows a general view of the work. The boom appears in the foreground and right side of the picture, the suspended bucket beneath it. Water and liquid sand is seen flowing toward the trench; beyond this a line of wells connected up to a central suction pipe. Beyond these is a section of sheeted trench, followed by a platform for lowering material to the sewer under construction. In the background the trench is seen with back-filling completed. Each of the three A-frame derricks supports a pump. In Fig. 2 the same is shown in outline plan and elevation.

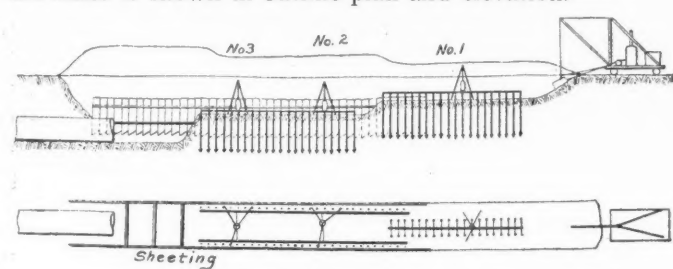


FIG. 2. OUTLINE ELEVATION AND PLAN OF TRENCH
FIRST SERIES OF WELLS

These, draining the trench just behind the bucket excavator, are connected to a main suction pipe, which in turn is connected to vacuum pump No. 1. The main suction is a 4-inch horizontal pipe, composed of six 22-foot sections joined by flanges. Every 2 feet along this pipe is a cross valve with two bushings, each receiving a 4-foot length of 2-inch hard wire-lined rubber suction hose. The other end of the hose is attached to an L which forms the upper end of each well. These are all seen in Fig. 3.

The wells consist of 3-foot lengths of 2-inch well points connected at the end of 13-foot lengths of 2-inch iron pipe. These are jetted down two feet apart in a double row near the center of the trench; this position being chosen in order that room may be left for the sheeting on either side. Pump No. 1. thus draws from 132 2-inch well points sunk 16 feet below water level; and in addition there is a 4-inch well point to the same depth; also surface water is drawn in at the forward end of the 4-inch suction pipe, where a strainer is attached.

As the work progresses a 22-foot section of horizontal suction pipe is moved ahead and connected up, gates at frequent intervals making it possible to do this without shutting down. The pump, when first set up, is connected to a forward section and can remain in that position until all in the rear have been moved ahead of it, or



FIG. 3. NEAR VIEW OF WELLS

Taken from pump No. 1. Rear end of suction of first series and forward end of second series, with suction.

during nearly two days' work. When a 22-foot section is placed ahead twenty-two wells are sunk and connected to it. After draining by these forward wells has proceeded for an hour or two the trench under the rear or sixth section is sheeted, 2" x 8" x 12' sheeting being driven by mauls. The excavation is then started by hand shoveling and carried down about 6 feet

SECOND SERIES OF WELLS

At this level the second series of well points are sunk another 16 feet, so that they penetrate below the bottom of the lowest excavation and 6 feet below the lower edge of the sheeting. Two pumps are used here, and to each are connected three lengths of 4-inch suction hose, one leading straight down to a 4-inch well, and the others to the two sides of the trench, where each is connected to a 2-inch horizontal suction header which extends along the trench just inside the sheeting, and to which the wells are attached. A 4-way connection in the suction of each pump and about one foot below it permits of this arrangement. Both pumps draw upon the same suction headers.

To these headers are connected the 1¼-inch wells, which are jetted down as close as possible to the sheeting, so that they shall not interfere with the work of the shovellers. Sections of header and wells are moved ahead, as in the first series of wells. By proper manipulation of valves the pumping can be made stronger in any part of the excavation where specially large quantities of water may be encountered, the combined capacities of both pumps being concentrated on the wells at such points.

This gives an advantage over the ordinary sump method of draining, under which new sumps would need to be continually dug and braced and pumps hung above them, at considerable expense for labor and material. This adjustable suction makes the pumping more efficient, also, since the water is drained from the longitudinal area desired and not in a series of circular areas, largely outside the limits of the trench.

The excavation, both in the upper 6 feet and between the second series of wells, is in comparatively dry sand which would stand at ½ to 1, although the same sand when wet would take a slope at least as flat as 15 to 1. The contractor stated that a laborer can handle several times as much sand in the damp state as when either wet or dry, since the former is washed off the shovel and the dry sand runs off, while the damp sand piles high and packs close. The damp sand also affords a firm base or foundation for the invert brick work. It is claimed that the method of drainage has saved the contractor about \$40,000 because the excavating gang and bricklayers are working under the best conditions, although 22 feet below water level.

THE PUMPS

The pumps were manufactured by the Emerson Steam Pump Co., of Alexandria, Va., and are their No. 3 size. They have 5-inch suction and 4-inch discharge pipes, and a capacity of 725 gallons per minute. They were all hung by chain falls from A frames, the first of these being mounted on rollers placed on 3" x 12" x 16' plank, to facilitate moving it forward. The sheeting prevents the others being so mounted.

SEEPAGE and BACK WATER

The discharge pipes of the pumps empty into a 10-inch tile drain laid in a small trench by the side of the main excavation. This, in turn, discharges into the completed sewer on the far side of a dam of sand-bags. The amount of water so discharged has not been accurately measured, but it is a rushing stream two-thirds filling the 10-inch drain pipe, and flowing at a rapid rate, owing to a drop of over 20 feet in 200.

The backwater in the completed sewer is about 4 feet deep and the seepage through this dam, as well as that which leaks in through other channels, is sufficient to keep a fourth vacuum pump working continuously day and night. A temporary manhole was built in the centre of the arch, and in this was suspended a fourth Emerson pump, known as the No. 1 size, with a 3-inch suction and 2 ½-inch discharge pipe, and a capacity of about 250 gallons per minute.

QUICK-SETTING CEMENT MORTAR

After the brick work is completed, pumping is continued for about half an hour in that part of the trench, to insure the proper setting of the cement mortar. To hasten this process half Universal Portland and half Utica Hydraulic cements are used.

The lowest trench braces are taken out after the invert is completed, and before the arch is begun. This was made possible because the sheeting extended one foot below the top of the invert, and is thus held firmly in place.

FUEL BILLS

The entire coal bill for the job averages \$25.00 per day for 24 hours. Assuming that the four Emerson pumps and the small jetting pump consume half of this fuel, pumping fuel will average \$12.50 per day, the remaining fuel being divided between the clamshell and scraper bucket. Assuming the two buckets require equal coal, the fuel for each will be \$6.25 per day, with coal at \$3.60 per ton.

COMMENTS ON PUMPING SYSTEM

It is a fact worthy of note that the hundreds of connections between flanges, rubber hose, ells and suction pipes, cannot be made absolutely air tight and that, with the high vacuum inside, a considerable amount of air must find its way into the suction of the pumps. This fact does not seem to hinder their operation, owing probably to the large volume of the chambers in which the condensed steam forms the vacuum.

Mr. Sargent, representing the consulting engineers on the job, is highly pleased with the success of the installation, and Mr. Green, the contractor, says his saving in time and labor are tremendous. Were shutdowns to occur which would cause the delay of even half an hour, they claim the excavation would become so wet as to be extremely dangerous to the workmen, and make the costs much higher owing to the unusual fluidity of the sand.

In commenting upon the leakage of air into the vacuum pumps and the slight effect, if any, which it has on their operation, one of the men interested said that the amount of air mentioned is possibly augmented by the entrance of more air through the well points; for when the water is drained from any section, the vacuum at that point still remaining undiminished would, under certain conditions, be likely to inhale air at that point also.

It is interesting to contrast this vacuum method with its diametrically opposite method—the pneumatic caisson process, or compressed air method, of excavating in water bearing strata. The pneumatic process uses compressed air to force the water downward, away from the sand or other soil to be excavated. This excavation can frequently be carried down below the edges of the caisson.

So also in the vacuum method at Gary, the digging is carried down below the bottom of the wooden sheeting—and this in very fluid material, showing that draining the water from below is as effective in the Gary method as is the displacing of the water from above, the compressed air method. Obviously, the expense of air compressors and air locks, and the dangers of air pressure to the workmen, are far beyond the small investment required for pumps and pipes.

JETTING DOWN WELL POINTS 16 FEET

Two men were timed while using a 1-inch waterpipe for jetting down the 1¼-inch well points used in connection with the second and third pumps. The jetting stream was supplied at 100-lb. pressure, and the two men sunk four well points in one minute. This time does not of course include the making of rubber connections with horizontal headers.

COST OF WORK PER DAY

(Daily progress averaged 60 feet)

Cost of driving and pulling sheeting and setting bracing (9 hours):

	Wages	Total
4 men setting braces.....	\$2.25	\$9.00
3 men driving sheeting.....	2.50	7.50
4 men pulling sheeting.....	2.50	10.00
1 carpenter	3.00	3.00
Total.....		\$29.50

Cost of pumping and changing piping system, day and night:

Fuel for 24 hours.....		\$10.00
12 pipe linemen, at.....	\$2.25	27.00
6 firemen at.....	3.00	18.00
2 superintendents at.....	3.00	6.00

Total for three big pumps..... \$61.00

Cost of keeping out back-water, night and day:

Fuel for 24 hours.....		\$2.50
2 firemen at.....	\$3.00	6.00
Total.....		\$8.50

Cost of clearing timber (9 hours):

2 men at.....	\$2.00	\$4.00
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Cost for backfilling:

1 engineer	\$5.00
1 fireman	3.00
3 laborers	6.00
Coal	6.25

Total..... \$20.25

which, divided by 500, gives the unit cost of backfilling at about 4 cents per yard. But part of the backfill is put in by shovelers immediately after the arch is finished.

Total cost of handling earth, and trench expense per day:

Bucket excavator (day only, including fuel)....	\$20.25
Pumping out trench, and changing pipes (24 hrs.)	61.00
140 shovellers, day only, at \$2.15.....	301.00
Backfilling, day only.....	20.25
Sheeting and bracing, day only.....	29.50
3 water boys, at \$1.00.....	3.00

Total..... \$435.00

Cost of laying brick daily:

5 men mixing cement mortar, at.....	\$2.50	\$12.50
5 men carrying cement mortar, at.....	2.50	12.50
3 men lowering cement mortar, at.....	2.25	6.75
6 brick masons (5,000 brick each daily) ..	10.00	60.00
3 brick tenders, at.....	3.75	11.25
15 brick handlers, average.....	2.50	37.50
26 men on industrial railway, at.....	2.00	52.00
3 teamsters, at	2.50	7.50
3 teams, at	9.00	27.00
3 form setters, at.....	3.25	9.75
3 water boys, at.....	1.00	3.00

Total for labor..... \$239.75

30,000 brick, daily, at.....	\$6.50	\$195.00
30 bbls. Portland cement, at.....	1.75	52.50
30 bbls. Utica hydraulic, at.....	1.00	30.00

Total for materials..... 277.50

Total cost 30,000 brick daily..... \$517.25

Grand total costs per day (approximate):

Brickwork	\$517.25
Earth handling and trench expense...	435.00
Pumping out finished sewer.....	8.50
Clearing timber.....	4.00
Superintendence and organization....	50.00
Repairs, estimates, losses and depreciation	40.00

Grand total \$1,054.75
or \$17.58 per lineal foot of sewer.

The cost of occasional railroad trestles and unforeseen accidents cannot be included in the above. Credit must

be given to the contractor for many low costs under these conditions, and for good management of labor, and care to provide against accidents in the treacherous sands bordering Lake Michigan.

The following were engaged upon this work:

A. P. Melton, city engineer of Gary, Ind.; Alvord & Burdick, consulting engineers and designers; W. F. Sargent, their local representative; E. M. Scheffow, engineer of construction for Green & Sons; R. Shackleton superintendent.

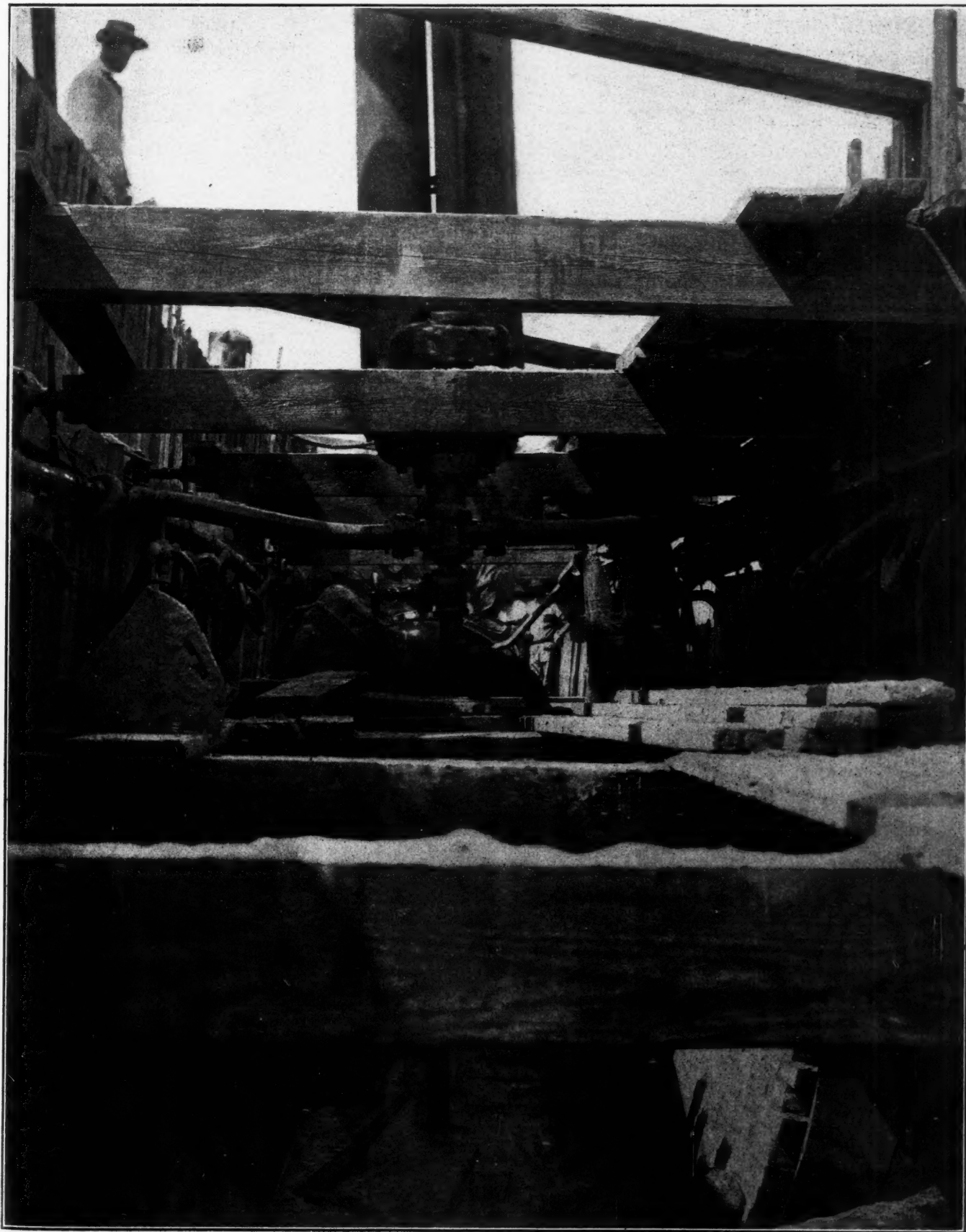


FIG. 4.—SECOND SERIES OF WELLS. PUMP SUSPENDED IN CENTER. WELL POINTS CLOSE TO SHEETING

BRADFORD WATER RATES

**Meter Rates Considered Too Low—About Half the Supply
Furnished Free—Financial Embarrassment to
the Department the Result**

THE city of Bradford, Pa., has a population of about 20,000, of which it is estimated that 17,200 are supplied with water by the Water Department. The average daily consumption is estimated to be 1,839,024, or about 107 gallons per consumer. Hotels, breweries, machine shops, manufactories, brick yards, foundries, laundries and two hydraulic elevators (no new ones will be allowed to be connected for the present) must use meters, and are charged 4 cts. per 1,000 gallons. Any consumer whose annual rates exceed \$20 per annum may be required to take water by meter, and for such as do not come under the above classification the rate is 6 cts. per 1,000 gallons. Of the 3940 taps 101 are metered.

In the last annual report Superintendent Heffner shows that the Water Department is being badly handicapped financially by the low rates and free supplying of water forced upon it. The rate of 4 cts. is much lower than the regular domestic rates, and is claimed to be justified by the desirability of the city to encourage new industries to settle there. Moreover the Department is being continually directed to grant free water for various purposes, thus curtailing the revenues or increasing the expense. It is estimated that there is now furnished free of cost water for the following purposes valued at the amounts given, such amounts being considered to be extremely conservative.

FREE WATER	
Flushing public sewers.....	\$1,000.00
Street sprinkling by Street Department.....	500.00
257 hydrants	11,565.00
City Hall	150.00
Three public watering troughs.....	300.00
Fountains in public square.....	75.00
Five hose houses.....	125.00
Public Schools	250.00
Bradford Hospital	150.00
Carnegie Public Library.....	20.00
Various other exonerations.....	100.00
Total.....	\$14,235.00

Street Department, schools, libraries thus benefit at the expense of the Water Department, and this to such an extent that it has now reached the point where its revenues will not meet the necessary expenses, the revenues for this year having all been anticipated before January 1st, and there will be a deficit of \$10,000 or more on account of improvements inaugurated last year. The supply of water is becoming inadequate, but the Department has no funds for improving conditions. If this is met by issuing bonds to be assumed by the city at large, this relieves the Department of financial duties which rightfully belong to it. If, on the other hand, such bonds must be carried by the Department it would practically bankrupt it. Such conditions, resulting from unbusinesslike methods, make it almost impracticable to ever place the Department on an independent footing, or to determine what water rates would be necessary to enable it to be self-sustaining.

ENGINEERS' CHARGES FOR STREET PAVING

FROM time to time we have received inquiries concerning the proper compensation to engineers for various classes of work. The latest of these has reference to the designing and superintending of city pavements. The question of whether engineers' prices should be standardized is still an open one, discussed at frequent intervals. It may be of interest to many of our readers to learn that standard rates for this work are fixed by ordinance in New York City, such rates being as follows:

Sec. 277. The City Surveyors employed by any Borough President shall receive compensation for their services as follows, and no Surveyor's bill shall be paid unless the same be first certified by the Borough President employing him.

For a preliminary survey in regulating a street or avenue or for making a country road, for the first line of levels five cents per linear foot, measuring through the center of the street, avenue or road, and for each additional line of levels one and one-half cents per linear foot, to be measured in the same manner.

For grading, when done alone, eight cents per linear foot, measuring through the center of the street or avenue.

For grading and setting curb and gutter, when done under the same contract, twelve cents per linear foot, measuring through the center of the street or avenue.

For grading and setting curb and gutter and flagging or paving, when done under the same contract, fourteen cents per linear foot, measuring through the center of the street or avenue.

For setting curb and gutter alone, four cents per linear foot along the line of the work done.

For setting curb and gutter and flagging or paving, when done under the same contract but not in connection with the grading, twelve cents per linear foot, measuring through the center of the street or avenue.

For flagging when done alone, five cents per linear foot along the line of work done.

For fencing, including preliminary survey, five cents per linear foot.

For making a country road, fourteen cents per linear foot, measuring through the center of the road.

For establishing a new grade line, one and one-half cents per linear foot, measuring along the line.

For making the necessary surveys, and furnishing all necessary copies of damage maps in street opening proceedings, three cents per linear foot, measuring along the exterior line of the street or avenue, and along all interior boundary lines of each parcel included within said street or avenue lines; and for assessment lists and maps for street openings or other improvements, three cents per linear foot of map front; and for every additional copy of list and map required, two cents per linear foot of map front.

A surveyor employed by one of the Borough Presidents to make a survey, the compensation for which is not otherwise provided, shall receive such compensation as shall be agreed upon in writing between the Surveyor and said Borough President, before the survey or work be undertaken, and after the completion of the said survey or work the Surveyor's bill shall be certified by the Borough President in accordance with the terms of such agreement.

Sec. 280. A Surveyor shall be entitled to receive fifteen dollars for every certificate for payment to a contractor on any work done by contract made upon public advertising and letting, which shall be paid by the Borough President making the contract, and except as herein otherwise provided, no Surveyor shall be entitled to any payment for a certificate to a contractor.

The amount so paid for a certificate shall be deducted from the payment to be made to the contractor on account of the work certified to be done.

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It is also desired that the facilities furnished by the reference library in this office should be widely known and freely used by those interested in municipal affairs. Visitors will be welcomed and provided with conveniences for search, and inquiries by mail will be promptly dealt with.

AUGUST 26, 1908.

CONTENTS

Wet Excavation of a Sewer Trench. By C. M. Ripley (Illustrated)	279
Bradford Water Rates	284
Engineers' Charges for Street Paving	284
Free Water and Unrestrained Waste	285
Office Holders and Campaign Levies	285
Sewer Pipes and Joints (Illustrated)	285
Rates for Electric Pumping. By Alton D. Adams	287
Refilling Machine Brooms	288
Dog Catching at McKeesport	288
Water Works Repair Shop	288
News of the Municipalities	289
Legal News—A Summary and Notes of Recent Decisions	295
The Week's Contract News	296
News of the Societies	308
Personals	309
Patent Claims	309
Trade Notes	309

Free Water and Unrestrained Waste

East and west, in large cities and small, water works superintendents find it necessary to continually combat the tendency of councils as well as citizens to waste water, and to consider that the amount furnished is of small moment once the pipes and machinery have been installed. It seems difficult to educate them to a realization of the fact that quantity counts here almost as much as in selling gas or electricity. When, as is described on another page, a water department is compelled to give half of the consumption free of charge and to sell much of the remainder at below cost, those responsible therefor are introducing communistic conditions to a far greater extent than they probably realize. And when they refuse to sanction the use of appliances or methods which would prevent waste, and this exceeds the legitimate consumption, they are grossly squandering the money of the taxpayer or water consumer.

Office Holders and Campaign Levies

The custom, so general in city, state and federal departments a few years ago, of levying "voluntary" contributions from employees is happily falling into disuse throughout the country. In another column of this issue we record instances in New Jersey and Iowa of city regulations punishing with dismissal any employee who contributes to party funds. This is as it should be. Entire elimination of partisanship from all municipal departments is essential to the salvation of our cities—many believe of our republic even—and is welcomed by practically all heads of departments who are honestly striving for the city's best interests.

SEWER PIPES AND JOINTS

Water-tight Joints—Special Methods and Forms of Pipe to Secure These—Description of English Practice
by an English Authority

It is only during a very few years past that the subject of seepage into sewer pipe joints has been seriously considered and efforts made to prevent it by special jointing material or methods, or special pipes. In England efforts to overcome this objectionable feature of pipe sewers have been carried on for years and have resulted in many inventions, most of them involving expense and complications of manufacture and use which have largely prevented their general adoption. Because of their greater experience with such contrivances, however, the English engineers may be supposed to be more fully informed on the subject, and the description given below, from a paper by H. C. H. Shenton, an English authority on the subject, is of considerable interest.

Speaking generally, it will be found best to use the plain stoneware spigot and socket joints wherever possible, as they are cheaper and cannot be beaten as to lasting qualities and general trustworthiness when properly laid. There are, however, many occasions when, owing to a variety of circumstances, it is desirable to use pipes which can be laid more quickly and with less labor than the ordinary stoneware, cement-jointed pipe.

Iron spigot and socket pipes with blue lead joints and turned and bored pipes, and, in special cases, flanged pipes, should be used where the circumstances make it worth while to incur the extra expense—i.e., where the cost of the labor in laying other pipes makes the total cost of the work greater than it would be if iron pipes were used, or where great strength is required, as in crossing a stream or passing through a treacherous bank.

The most common form of patent joint is that in which the outside of the spigot and the inside of the socket of the ordinary stoneware pipe is coated with a composition which generally consists of tar, sulphur, and sand. This is generally known by the name of the Stanford joint, and has been largely used. There are many composition joints of this kind.

Owing to the fact that the patents have elapsed, there is a danger of the Stanford joint, the Hassall's joint, and others which come under the heading of "composition joints," being made of inferior composition which will perish. It is therefore very important that the engineer should satisfy himself not only as to the design of the joint, but as to the quality of the composition used in making it. With the ordinary Stanford joint the direct advantage lies in the fact that the pipes require very little labor in jointing. If, however, the composition perishes, it is clear that there is nothing to prevent the joint leak-

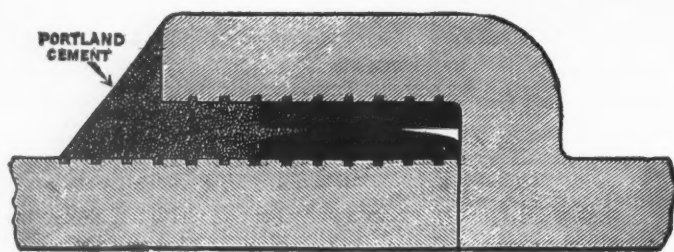


FIG. 1.—STANFORD COMPOSITE JOINT

ing badly. The author has on various occasions discovered joints which have so perished. Fig. 1 shows the improved Stanford joint, in which the composition forms the first part of the joint at the bottom of the socket, and a cement joint is made beyond this. It is no doubt safer with the cement, but it seems hardly worth while to make half a cement joint in this way. If it is possible to work the cement in the trench and form a good cement joint outside the composition, it certainly would be quite possible to make a good cement joint throughout, which would be far more trustworthy than the composition joint. Fig. No. 2 shows the ordinary form of Hassall's joint. This joint is used perhaps more than any other

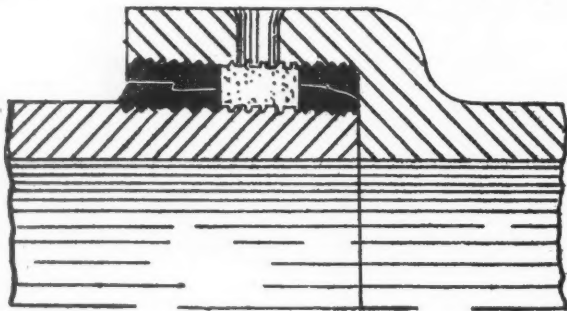


FIG. 2.—HASSALL'S JOINT

for sewers in wet trenches, and, owing to the fact that a ring of cement is formed, or supposed to be formed, between two rings of composition, great confidence is placed in its watertightness. When the joint is properly made the cement grout is poured in at one hole at the top of the socket, and finds its way round, filling up the whole of the space and driving the air before it, until the cement appears at the other hole at the top of the socket, thus proving that the entire ring is full of cement. There can be no doubt that this is a very good joint, provided the composition is right, and provided the work is properly looked after. But there is always a possibility of a careless workman pouring cement into both holes at once, in which case the joint would appear to be quite sound, and would stand a water test, owing to the two composition joints; but the cement ring, which is trusted as a third line of defence, is not there. It is therefore necessary to guard against a false sense of security when using joints of this description. The supervision of the work should not be relaxed because patent pipes are being used.

As an improvement of this joint, the Doulton's grouted composite joint is especially designed for use in wet trenches. To quote from the catalogue: "In earlier joints of this class the grout has been poured into a closed cavity in the socket, of small dimensions, and having no adequate provision for the escape of air or superfluous water, the operation therefore invariably having been attended with risk of imperfect joints. In the 'grouted composite' joint the sealing chamber is of ample dimensions, offering no hindrance to the flow of the grout. The chamber is closed by a band of porous fabric of a texture such as to retain solid particles of cement while it allows the escape of air and superfluous water. It is this feature of the joint which makes it unique. Risk of faulty joints through confinement of air or water is entirely absent, since both air and water filter away through the pores in the canvas. An absolutely solid and continuous ring of cement around

each joint can thus be relied upon; and, moreover, its presence is actually visible from the outside of the completed joint, an advantage not possessed by any joint used hitherto." This joint should be very useful, but the porous fabric must be of a quality to allow air to pass through it easily even when wet.

In the Brandram joint the pipes employed are plain butt-jointed stoneware pipes, or sometimes pipes with a rebated joint contained in the thickness of the pipe, are used. A wide steel band (b), nearly equal in length to the circumference of the pipes to be jointed, coated with Dr. Angus Smith's composition, with each end curling over to form an eye (e), is dipped into hot bitumen. The pipes to be jointed are generally

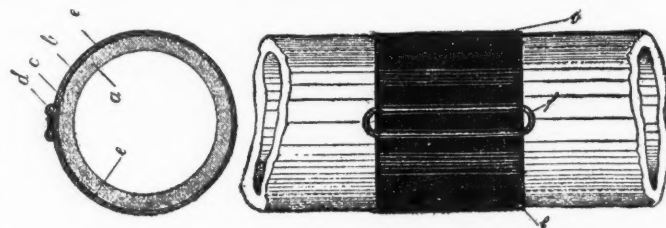


FIG. 3.—BRANDRAM JOINT

wrapped round with a piece of special bitumenized paper or canvas, and the wide steel band is drawn closely round the joint, as shown by means of wire handles, while a small covering plate (c) bedded in bitumen is placed under its ends to complete the metallic circle. Hot bitumen (b) is poured over the joint while this is taking place. A screw-cramp is then applied and the band tightened until the bitumen begins to exude at the edge of the band all round the pipe. Staples (f) are then inserted in the eyes of the band from each side, and further bitumen is poured on, covering the staples, and the joint is complete. Among the advantages of this joint are that it can be made quickly and tested at once. Pure bitumen being imperishable, the joints should be altogether superior to the composition joints already mentioned, which composition generally consists of a mixture of tar, sulphur, and sand. A pipe can be readily removed to insert a junction, or for any other reason, when Brandram joints have been used. This joint is very useful for large concrete tube sewers, and has been used by the Portsmouth Corporation for jointing 42-inch concrete tubes in running sand.

Messrs. Thos. Wragg and Sons, of Burton-on-Trent, are makers of what is known as the "Jennings jointer." It is an ordinary junction pipe with a capped socket, designed for use in the construction of stoneware pipe sewers, where it is required to leave junctions for future connections of branch drains. The general feature in these "jointers" or capped sockets lies in the cap and socket being in one piece, with a groove formed outside the socket immediately behind the cap, so that the cap may be easily cut off with a chisel when it is required to make a junction, leaving the socket ready for the insertion of the spigot of the drain pipe. By using these cap sockets in new sewers laid in wet ground, leakage of subsoil water into them through the junction pipes is rendered impossible. The extra expense of the jointer is a very small matter, whereas the saving of money in using them may be very great.

Messrs. Doulton also supply a similar junction cap. The cap fits over the outside of the socket, and is secured with an ordinary cement joint, and, like the "Jennings jointer," the cap is grooved on the outside; it is also grooved on the inside, so that the outer disc can be readily cut off with a chisel, leaving the interior of the socket ready to take the branch pipe.

There are other methods adopted by pipe makers whereby the junction pipes may be securely sealed, and it will always be well for the engineer to specify some such method of insuring that the dead junctions do not give trouble when laying the sewers in wet ground. The junction pipes are frequently a fruitful source of trouble, and great expense is sometimes incurred in finding and making good leaks which take place through them.

RATES FOR ELECTRIC PUMPING

Features Favoring Low Cost of Energy—Causes of Variations in Price—Meter Rate Preferable to Horse-Power-Year

By ALTON D. ADAMS.

PUMPING in water supply systems is accorded very low electric rates, because of the low cost of this work to the electric plants.

Among the features that tend to low cost of the energy supplied by electric plants for pumping water are the large percentage of each day during which the pumps may be operated, the steady nature of the pump load, and the fact that the pumping can usually be discontinued during those hours when other electric loads reach their maximum on the generating station.

These are advantages that are combined with few if any other loads of electric stations, and if properly utilized they enable electric pumping to be done by equipment that would otherwise be idle or only partly loaded, and take nothing from the generator capacity available at the peaks of lighting and tractions loads.

Another factor that tends to low rates for electric pumping in water supply systems is the possibility of doing this work economically with oil, gas or steam power, so that the electric service must come down to about the cost of power in such plants, if it is to be adopted.

It also happens that the cost of power in a small gas, oil or steam plant may be much higher per unit than the like cost in a large electric supply system.

With all these influences at work, it is not surprising to find rates for electric pumping that vary from less than one-half of one cent up to several cents per horse power hour.

Besides the other influences that make for variations in rates for electric pumping, the frequent practice of fixing rates at so much per million gallons of water pumped has its effect. Unless a contract on this basis passes through the hands of an engineer representing the city or town, the municipal officers are apt to have very little idea of the actual rate per horse-power hour or kilowatt hour of electric energy.

The better practice is to have the contract rate stated in cents per kilowatt-hour or horse-power hour, so that it is clear to all, and readily compared with other rates. If this is done, an engineer can easily compute the cost of the electric energy per million gallons of water pumped, when the head of water is known.

Some of the above points are illustrated by the following rates and data of four pumping contracts.

RATES FOR ELECTRIC PUMPING.

No. of Contract	H.P. of Pump Motors	Actual Rate for Pumping Named in Contract	Equivalent Cents per H.P. Hour	Ass'm'd Hours Operated Yearly	Rate per Motor H.P. Year
1	1500	\$9.00 per million gallons pumped	\$0.73	4,380	\$28.00
2	540	4.50 " " " " " " " "	0.36	8,760	28.00
3	.....	0.85 cents per K.W. hour.....	0.63	*912	8.62
4	.....	6.50 per million gallons pumped	0.93	2,190	22.63
	.....	30.00 per year per Motor H.P....	1.23	2,190	30.00

*Actual hours based on two months' operation.

For the pumping plant with motors of 1,500 horsepower capacity, the contract rate was \$9.00 per million gallons of water pumped per month, up to a quantity of water that would require the pumps to be operated at full capacity during about twelve hours per day, on every day in the month. For larger quantities of water the rate was gradually reduced, and reached \$4.50 per million gallons pumped per month, when the pumps were operated at full capacity during the 24 hours of every day. As may be noted, it cost as much to operate these pumps at full load during twelve as during 24 hours per day, a result that would hardly have escaped attention if the rate per kilowatt hour had been named.

Using the head against which this water was pumped, which was not mentioned in the contract, and making fair allowance for losses in motors and pumps, the equivalent rate per kilowatt hour was seventy-three one-hundredths cent, when the 1,500 h.p. pumps were fully loaded not more than 12 hours per day, and thirty-six one-hundredths cent when they were fully loaded 24 hours per day, every day in the month.

On the contract rates for this 1,500 h.p. pumping plant, the charge was \$28 per h.p. of capacity per year, if the plant worked at full capacity either 12 or 24 hours per day, but might be any less amount with less than 12 hours work daily.

For the pumping plant with 540 h.p. of motors, the contract rate was eighty-five one-hundredths cent per kilowatt hour, and the bills for electric energy at this plant during two months of normal operation indicated a yearly expense of \$8.62 per h.p. of motors.

The rate of \$6.50 per million gallons of water pumped, allowing for the head or pressure against which the pumps worked, and for losses, amounted to about ninety-three one-hundredths cent per horsepower-hour of electric energy supplied. On this basis, if the average work of the motors amounted to six hours per day at full load, with a motor efficiency of 90 per cent., the expense per motor horsepower per year was \$22.63.

It should be noted that all the figures thus far discussed of expense per motor horsepower per year might have been less, if less water had been pumped.

This is not true, however, for the last contract indicated in the table, where the rate was \$30 yearly per horsepower of motors, without regard to their hours of operation or to the quantity of water pumped.

Such a rate is not usually desirable for a city or town, for the hours per year that motors work at full load are often much less than expected, and the result is apt to be a high rate per kilowatt-hour.

At this rate of \$30 per horsepower of installed motors per year, on the assumption that the motors do work equivalent to their operation at full load during six hours per day, or 2,190 hours per year, at an efficiency of 90 per cent., the rate for electric energy is 1.23 cents per horsepower hour.

It is particularly to be noted that the plant having a meter rate of eighty-five one-hundredths cent per kilowatt-hour had to pay only \$8.62 per year per horsepower of motor capacity, because the equivalent hours of opera-

tion at full load were only 912 per year, as indicated by two months' record under normal conditions.

On the other hand, the rate of \$30 per motor horsepower per year had to be paid, under Contract No. 4, though the actual hours of motor operation may have been no greater than under Contract No. 2.

Whether buying potatoes or electric energy, it is safest to buy by measure—in the one case by the bushel, in the other by the kilowatt-hour.

REFILLING MACHINE BROOMS

The Superintendent of the Pittsburg Municipal Asphalt Plant, Mr. Ryan, has undertaken the work of refilling the machine sweeper brooms, and is thereby saving the city a considerable sum of money.

The old brooms are brought to the plant and the bristles are removed. This is done by placing the broom in a steam cylinder made of an old piece of gas pipe with tight-fitting covers, in which a steam pressure of 15 pounds is maintained. The heat of the steam softens the asphaltic cement, after which the bristles are easily pulled out.

Rattan is obtained from Ludia in long lengths and cut by hand to the desired length. These are tied, at one end only, into bunches of the desired size, this work keeping three men busy. A fourth man places an empty spindle on the horses between himself and a pot of asphaltic cement. The tied end of the bristle is dipped into the cement and then thrust into the hole of the spindle. This cement soon cools and holds the bristles firmly in place.

The cost of filling the brooms is about \$6.50 against the former contract price of \$10.50. As the life of a broom is only about five days, during which it covers about nineteen miles of streets, this results in a very considerable saving in a year.

DOG CATCHING AT McKEESPORT

The city ordinances of McKeesport, Pa., forbid any dog to run loose on the streets unmuzzled, and the occurrence of several accidents have led to the rigid enforcement of this law. All dogs must be licensed and have a license tag fastened to the collar.

Dog catchers are provided with a light covered wagon having steel wire gratings. This wagon contains two sections, one above the other, for separating the sexes. The man who does the catching is provided with a device which is considered to be an improvement over the ordinary net, being not so liable to frighten the dogs and interfere with catching them. This consists of a black-snake whip to the end of which is attached a light, freely running chain in the end of which is a ring which slips over the whip, thus forming a noose. With this it is very easy to catch the desired dogs. Accompanying the wagon are also a driver and a police officer, the purpose of the latter being to protect the catcher from belligerent owners.

Dogs are taken to a pound just outside of the city limits. Here the license number of any dogs carrying tags is obtained and the owners are notified. On arrival the dogs are placed in pen number 1; on the second day they are moved to pen number 2, and on the third day to a final pen; and

at the expiration of three days they are killed. The use of separate pens avoids any doubt as to the length of time a dog has been in detention. Owners can redeem their dogs on the payment of \$1.00 plus 25 cents for each day the dog has been in detention. The animals are well fed on cooked meat and bread while being held. Any dog suspected of having rabies is kept in a separate pen and watched for the development of the disease.

The method of killing the dogs, which is believed to be the most humane and practicable, was by means of a tight metal box containing an observation glass and connected to a charcoal stove. The charcoal fumes from this stove, after passing through an air cooler, enter the box at a little higher than atmospheric temperature. The fumes are allowed to enter until practically all the air is driven out and the dogs are then placed in the box, either singly or a number at a time. A number of dogs were killed during the visit of our representative and showed no apparent inconvenience and made no struggle whatever. The time before reaching unconsciousness varied from 15 seconds to 3½ minutes, depending upon the vitality of the animal. Four or five minutes additional are allowed to insure death. The highest rate of killing at this station has been 67 dogs in one hour and thirty minutes. The bodies of the dogs are disposed of at the city incinerating plant.

The entire cost of catching and killing dogs is \$8.50 per day, which expense is entirely met by the receipts from licenses and redemptions. The men employed receive a daily wage and are not dependent upon the number of dogs caught, and, therefore, have no inducement to lure dogs from the premises of their owners for the purpose of catching them.

WATER WORKS REPAIR SHOP

The Lowell, Mass., Water Department operates a repair shop which is of great value, both in effecting a saving of expense and in permitting promptness in repairs. Repairs last year were made on several pumps, three air pumps were practically rebuilt, and repairs were made on 870 meters (8,804 are in use), 249 fire hydrants and 116 gates. In addition many miscellaneous repairs were made on drinking fountains, reservoir screens, and other appliances. Superintendent Robt. J. Thomas believes that repairing meters in the repair shop is more economical than sending them to the different manufacturers for repairs, especially if the cost of transportation is included; besides this, considerable delay is avoided.

A brass foundry is connected with the shop, and 5,078 pounds of composition castings were made here in 1907. This was used in manufacturing 1,526 service cocks, hydrant and gate stems, pump valve seats and plates, faucets for fountains, and other miscellaneous articles.

During the year a new brass worker's lathe, similar to one already in the shop, was purchased, and the two brass lathes placed on the second floor, all the iron-working machinery being upon the first floor.

No separate account appears to have been kept of the expenses of this shop. The cost of the brass foundry is given as \$489.66, and machinery and tools \$982.18. Maintenance of meters cost \$3,767.12.

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS**Council Committee and Engineer to Investigate**

Altoona, Pa.—Councils have passed a resolution that a committee consisting of three members of Select Council, three members of Common Council and the Chairman of the Board of Public Works be appointed for the purpose of making an investigation of the paving work to ascertain whether the same conforms to the contracts and specifications, with full power and authority to employ a competent engineer whose services shall be paid out of the department of public works.

Fifteen Miles of Streets Torn Up

Baltimore, Md.—An enterprising citizen of statistical tendencies has compiled a census of the number of city blocks of streets now torn up for purposes of public improvements. It appears that 15 miles, or 180 blocks, is the total length of disrupted thoroughfares. Summing up the work separately, the Water Department is working in 13 street blocks, the Sewerage Commission in 30, the Subway Department in 34, the telephone companies in 8, the Harbor Board in 7, the United Railways Companies in 43, while 56 blocks in the city and annex are being paved. Arranging the street work by districts the results are: Central, 22 blocks; Northern, 28; Eastern, 58; Northwestern, 26; Western, 6; Southwestern, 32; Southern, 9.

Cooperation Saves Delays

Baltimore, Md.—The Commissioners for Opening Streets report that progress in their work is being expedited to a remarkable degree by the cooperation they are receiving from other departments and the gas company. Since the appointment of the present commissioners it has been customary to issue notices naming the date when specifications for a certain street are to be advertised and request that any underground connections needed be made promptly. A second notice to the same effect is sent out when bids are received, and a third one when the contract is awarded. After the date fixed in the third notice has expired permits are refused.

Cost of Street Department Reduced

Boston, Mass.—The expenditures of the Street Department for 1908-09 will be decreased \$642,913 over last year, according to figures furnished the Finance Commission by Superintendent Guy C. Emerson. Over six hundred men have been dropped from the payrolls. The department is being reorganized by degrees, and further changes are contemplated. The West Roxbury yard has been abolished, at a saving of \$10,000, and the Charlestown and East Boston yards have been combined, with perhaps the saving of an equal amount. It is not claimed that the saving has been absolute, as it is probable that more work was done in 1907 than will be done in 1908.

Wants Work Properly Done

Knoxville, Tenn.—That City Engineer S. D. Newton and the City Council are determined that the street paving work done in Knoxville this year shall be fully up to the specifications and that no "just as good" materials than those specified can be put in the work is evinced by the action of the City Engineer in stopping work on Asylum avenue and the City Council ordering an investigation of the materials and work already done. The City Engineer declared before the Council that the rock being used in the paving was not granite or trap rock, as specified, but a form of East Tennessee limestone. Representatives of the paving company doing this work were before the Council and the Mayor spoke in no uncertain terms to them, giving them to understand the Council would expect all paving companies to live strictly up to specifications in the work done here. The present administration appears determined to see that the work is done properly without last year's controversies.

Lynn Street Commission Organizes

Lynn, Mass.—The first session of the Lynn Street Commission, appointed by Mayor Thomas F. Porter at the direction of the City Council, to investigate and report a feasible scheme for a consistent plan of street improvements, with authority to inquire into the operation of all departments doing work upon the streets of the city, was held at the Mayor's office at City Hall, and in the three hours and a half they conferred the members outlined an elaborate program, which indicates that their probe is going to be deep and far-reaching. The Commission is composed of ex-Mayor Henry W. Eastham, Hon. Arthur B. Breed, Albion Bartlett, William A. Fisher, George H. Jackson, S. Walter McDonough and William P. Connery. Mr. Eastham is Chairman. Every one of the seven members was present, and immediately Chairman Eastham called to order the Commission settled right down to business. A resolution was passed requesting the City Auditor to furnish in tabular form a report of the amounts expended year by year for the past 15 years for street improvements, sidewalks and street crossings, paving and laying out and altering streets, each account separately.

Would Use Cement Curb in Granite Country

Macon, Ga.—Cement curbs may be used by the city of Macon in the future, and will, if a suggestion made by Mr. Ben L. Jones, of the Road Board, is followed out. The city is now paying 50 cents per foot to the Quincy Stone and Granite Company, but granite can hardly be supplied fast enough to meet the demands. Curbs can be made of cement, and will cost but 37½ cents per foot, thus meaning a saving of 12½ cents for each foot. In some parts of the city cement curbs have been tried and have been found entirely satisfactory. The Street and Sidewalk Committee, of which Alderman G. L. Bright is Chairman, will take up next the question of cement and its use in the manner indicated.

New Certificate Will Promote Paving

New Orleans, La.—A conference was recently held in the office of City Engineer Hardee, participated in by representatives of banking companies and paving contractors. The object of the meeting was to have suggestions made and judgment passed upon the form of certificate to be issued in payment of works of permanent public improvement. A proof of the certificates was offered for inspection, and was found entirely satisfactory. Capt. Hardee says the city will issue a certificate that will be quite as good as cash, and be desirable to contractors, banking and investment concerns. All of the outstanding certificates will be covered by new ones, and before the end of the year contracts will be let for street paving and other public improvements, to be paid for by the new securities.

City Forces Undertake Granite Repaving

Pittsburg, Pa.—A further extension of the movement of the present city administration to have street repaving done as far as possible by the city employees without the intervention of contractors is being inaugurated, under the direction of John F. O'Toole, Superintendent of Highways and Sewers. Mr. O'Toole a few days ago commenced the repaving of Penn avenue, from Twelfth to Thirty-third streets, with a force of city laborers, and expects to have it completed in less than three weeks without serious interruption to traffic. The stone now in place will be used again, but where any of them are broken or badly worn they will be replaced with new ones, so that a smooth surface almost equal to a new street will be obtained. The Penn avenue job is by far the greatest piece of block stone "patch work" ever undertaken, and as a public works enterprise is looked upon as scarcely less important than the resurfacing of Grant boulevard, which was accomplished during the summer.

SEWERAGE AND SANITATION

New York Watershed to Be Protected

Albany, N. Y.—Dr. E. H. Porter, State Commissioner of Health, has recommended that all municipalities in the Susquehanna watershed having public sewer systems should establish complete sewage purification plants, and that factories discharging deleterious matter into the streams should be required to treat such wastes before discharge so far as is practicable in the light of present knowledge of purification of the respective class of wastes. The discharge of sewage into Black River is also to be prohibited, although Watertown, which has modern mechanical filters, is the only city taking its water supply from that source. The report also recommends that the Allegheny river be protected.

War on Mosquitoes Meets Success

Athens, Ga.—The war on mosquitoes waged under the direction of the Board of Health has been so active this summer that a prominent dealer in the city says that the sale of mosquito nets has been reduced to almost nothing. During the month of July the Sanitary Inspector has made 1,821 official visits. Of these 623 were inspections of lots, of which 194 were ordered cleaned. Catchbasins to the number of 244 were inspected, of which 44 were found to be breeding mosquitoes.

Would Protect Pavements

Columbus, O.—Columbus has put millions of dollars into street pavements, and now the Service Board and City Engineer are trying to save these pavements from the destruction threatened from various sources. The recent crusade against automobiles dripping oil, and wagons dropping coal and stone upon the streets, has been supplemented by steps to protect streets, and especially asphalt streets, from damage caused by the growing practice of building contractors of mixing cement and mortar on street pavements. City Engineer Maetzel filed a formal and lengthy complaint against this practice, and suggested that, if necessary, as a final resort, the Police Department be appealed to against this misuse of the streets. He reported that mortar not only injured asphalt paving, but also the tar filler in brick paving, so that it was deleterious on all improved streets. He suggested closed boxes for mortar.

Sanitary Sewer System Completed

Elgin, Ill.—The Board of Local Improvements has tested and accepted the east side sanitary sewer system, just completed at a cost of \$145,000. The plans of the sewer were drawn by City Engineer Lakin, and the first work was done in August, 1906.

Health Board Will Exhibit Its Own Work

Grand Rapids, Mich.—The Grand Rapids Board of Health, which was the first or second municipal board of its kind in the country to undertake anti-tuberculosis work, fearing that credit for its achievements are being appropriated by civic societies, has decided to make an exhibit of its own at the International Congress to be held in Washington in September. The exhibit will include plans of the new hospital and a landscape drawing of the grounds. Dr. Perry Schurty, who has been in immediate charge of the work, at a recent Board meeting accused the representatives of the Anti-Tuberculosis Society of attempting to take credit that belonged to the city. He said that the society never helped the Board in its work.

Sewage Disposal in Sight for Holyoke

Holyoke, Mass.—A recent visit of an engineer of the State Board of Health to Holyoke to inspect the sewer system is taken as an indication that the time is near at hand when a sewage disposal plant will have to be built. Restrictions have gradually been placed on the discharge of sewage into streams until at the present time but three rivers in the State, the Charles, Merrimack and Connecticut, are open to such uses. The State Board of Health is closely watching these streams, and at the first signs of actual menace to public health or widespread complaint the streams will be closed to sewage. Separation of

house and surface drainage and the building of a disposal plant would cost Holyoke a sum variously estimated at from \$150,000 to \$300,000.

Must Provide for Storm Water Since Paving

Martins Ferry, O.—It is the opinion of a number of leading citizens and city officials that the most important improvement that confronts the city is a new sewer system to take care of the surface water after storms. With the paving of many streets the surface water during storms has presented a proposition that, in the opinion of many, is the largest that confronts the city, and some plans must soon be taken to care for the water that formerly soaked up in the ground but now runs off on the paved streets. The present sewers are unable to care for this large volume of surface water, and especially since the paving of the streets on the west side of the city. Many are in favor of having the sewer system changed at the present time, as they claim it can be done now much cheaper than in the future. The matter already is being discussed by the officials of the city.

Advocates of Sewer Win Two Years' Fight

Narragansett Pier, R. I.—The advocates of a new sewer system for Narragansett Pier triumphed in special town meeting after having met with defeat during two years of agitation. The meeting, the largest, perhaps, in the history of the town, passed a resolution for the construction of a mile and a half of sewer to connect with a precipitation tank. An expenditure of \$30,000 was authorized, and a committee empowered to raise the money and carry out the work was appointed. The resolution met with little opposition, notwithstanding the fact that the project had been defeated at two previous gatherings of the taxpayers. Nevertheless, the vote was comparatively close, 68 voting for the plan and 53 against it.

Recent Work of New Jersey Board of Health

Trenton, N. J.—The State Board of Health, in ordering sewage disposal plants installed at Atlantic Highlands and Sea Bright, has taken the first steps in carrying out its general plan of purifying all the sewage now being discharged into the ocean from the seashore towns. The Board is also conducting a rigid examination into typhoid fever conditions throughout New Jersey, particularly in and around the dairies of the northern and southern sections of the State. Work has also been carried on in the examination of water; 95 samples have been tested. It is the intention of the new Board to look into all private as well as public supplies and compel compliance with the health code.

WATER WORKS

Finds Water, but Doubts Capacity of Pipe Line

Amsterdam, N. Y.—As a temporary expedient to increase their water supply, the Water Commissioners have decided to lead the water from nine springs on the Hulett farm to McQueen's creek, one of the sources of supply of the city reservoir. It is said that sufficient water can be got in this way to fill a six-inch pipe. There is a question, however, whether the 18-inch main from Glen Wild is capable of carrying more water. Engineer Harvey M. Geer, who has been investigating the matter, says that in order to carry more water the pipe would have to be operated under a head never intended, which might result in a serious break.

Defective Meters Result in Large Loss

Columbus, O.—Charles Saunders, head of the meter inspection bureau, has discovered that the city has been losing large sums of money owing to the use of defective meters by large manufacturing establishments. The importance of accurate measurement by large meters is shown by the fact that twelve customers, including railroads, pay one-fifth of the revenue received by the city for metered water, which altogether amounts to \$200,000 a year. Seven big meters were found which were either clogged up or so worn as to fail utterly to register accurately the water going through them. In one instance a consumer's bill was \$25 a month, and after cleaning and repairing the meter it was \$125.

All Wells and Springs to Be Inspected

Bridgeport, Conn.—Availing itself of the services of the Bridgeport Hydraulic Company's chemist, the Board of Health will institute a campaign to determine the exact condition of the water in all the wells and springs in the city used for drinking purposes. The result of the analysis in each case will be made public, and should the water be found unfit to drink, a sign to that effect will be posted on the well or spring in question. This action was determined upon when it came out that by a peculiar coincidence Health Officer McLellan and President Ober, working independently of each other, had each caused samples of water taken from a spring at the foot of Fifth street to be analyzed. The water was found unsafe to drink, and a warning sign will be posted at the spring at once. A number of signs have been ordered printed, and one will be posted on each well or spring found dangerous for drinking purposes. It is not the intent of the Board to close any of the suspected wells, but merely to warn the public that the water therein is dangerous, and should be taken only at the drinker's risk.

Long Litigation May Result

Chattanooga, Tenn.—A wide variation in the valuation of the water company's plant, which the city wishes to acquire, as made by the company and by the city, \$1,927,000, as compared with \$1,000,000, is likely to lead to long and expensive litigation. The contestants are not new to the courts, as ten years ago there was litigation over an ordinance in which the city sought to regulate rates. The company won the suit. Now it is expected that if a price for sale is not agreed on, the city will take steps to build a plant and the company will seek an injunction, pleading that the contract now in force provides for a privilege every five years of sale to the city on terms to be arrived at by means of arbitration.

Chicago's Water Waste

Chicago, Ill.—Chicago is wasting water at the rate of more than 83,000,000 gallons per year. This estimate, accompanied by a protest, is included in the annual report of City Engineer John Ericson, just made public. Mr. Ericson also takes up the meter question in his report, showing that consumers without meters get their water for less than one-third of what meter users have to pay. He asserts that the city is not receiving "an adequate rate or revenue from the unmetered supply."

Mayor Advises Bonds Only for Water Service

Pittsburg, Pa.—Mayor Guthrie has had an ordinance prepared providing for an issue of water bonds to the amount of \$5,275,000. Of this \$2,675,000 is for purchasing the Monongahela Water Company's plant, on the south side, and for extending the service. For the north side \$2,125,000 is allowed and \$475,000 for building a main through Brushton to supply the East End. This is all of the once-proposed \$15,000,000 bond issue which the Mayor is willing to approve. He believes that the city's borrowing capacity should be reserved to meet the probable demand from the State Board of Health for a sewage disposal plant, which will cost, perhaps, \$15,000,000. The present borrowing capacity of the city is \$18,000,000.

Litigation Costs

Portland, Me.—The Portland Water District must pay a total of \$127,071.77 for attorney's fees and expert witnesses at the recent appraisal hearings. The bill of Herbert M. Heath, senior counsel for the defense, is \$50,000. The bills for the other attorneys and for the expert engineers are: Benj. Thompson, \$18,897; D. E. Morton, \$9,116.90; F. H. Haskell, \$5,800; Wm. H. Looney, \$4,800; Allen Hazen, engineer, \$12,069.07; John R. Freeman, engineer, \$4,023.41; E. V. French, engineer, \$1,987.81; Leonard Metcalf, engineer, \$7,709.91; Pride, engineer, \$12,667.73. This amount of course, does not include the sum due the appraisers, the stenographer or any other court charges. It is understood that the attorney's fee and expert witnesses' bills to the Water Company will amount to about \$130,000.

STREET LIGHTING AND ELECTRIC POWER

Competition Allowed in Territory Poorly Served

Albany, N. Y.—In granting the petition of the Citizens' Electric Service Company of Bath for permission to begin construction of an electric light plant in that and surrounding villages and towns, the Public Service Commission, in the Second District, holds that when an existing company fails to properly discharge its duties to the public and does not put its service upon the proper basis it is entitled to little consideration when it seeks to exclude competition. The opinion written by Chairman Stevens states that no general rule can be formulated which will indicate with precision when a new lighting company may be permitted to do business in a field already occupied by another company; that the circumstances and conditions prevailing must control the decision. The application just granted was opposed by the existing company, the Bath Electric and Gas Company, on the ground that a competitor would diminish its business and impair the value of its investment.

Threatens to Turn Off Gas

Buffalo, N. Y.—The Buffalo Gas Company has served notice on the city that it will turn off the gas to street lights and the public buildings on September 10, unless its back bills of \$124,000 are paid. These have been accumulating since July, 1907. The city's old contract expired then, and a new one at substantially a rate of 75 cents for 1,000 feet was turned down. Just at that time the city had the company investigated by the old Gas and Electricity Commission. Prior to that time private consumers had been paying \$1. In making its decision the Commission failed to differentiate between the city and private consumers and merely fixed the price of gas at 95 cents. The company then began to bill the city at that rate, and the bills have been held up ever since. Meanwhile, the old gas law under which the decision was given has been declared invalid. Some time ago Chairman Stevens, of the Public Service Commission, suggested that the city pay for the gas at the rate of 75 cents and agree to pay more if it should be proved that such a price entailed a loss to the company. The company agreed to that, but the Lamp Committee of the Aldermen turned it down. Meanwhile, the gas company says it has had no money, and has been compelled to borrow to produce the gas. It has bonds of nearly \$6,000,000, upon which it has to pay 5 per cent.

Gas Company Will Lay Duplicate Mains

Hubbard, O.—The street committee of Council and the gas company has made an agreement regarding the location of gas mains. In Ninth Main street the company will lay parallel mains, one on either side of the street, and it is probable similar action will be taken in West Liberty street. This would obviate the digging of long trenches to make house connections. Wherever the property owners will consent the company will be permitted to lay pipe on private property just inside the sidewalks. Otherwise the mains will be laid in the street near the curb line.

To Get Electric Power

Wahpeton, N. D.—Negotiations are about completed, looking to the passage of a franchise which will bring water-generated electric light and power from a few miles this side of Fergus Falls, and will permit manufacturing at this railroad center with cheap power. The total available power will be 2,000 horse. The Commercial Club has on foot a plan to connect by electric railway Sisston with Wahpeton via Hankinson. The line would pass through some of the best farming land and most thickly settled country in the Dakotas, much of which is relatively far from railroad market.

To Compare Isolated and Central Plants

New York, N. Y.—In order to prevent the abandonment of isolated steam plants by owners who think the purchase of power from a central station is cheaper, the National Association of Sanitary Engineers will undertake to make thorough tests and show the owner what can be done with his own plant.

FIRE AND POLICE

Highwaymen Arouse Discussion in Police Circles

Boston, Mass.—Recent murders committed by highwaymen has led to discussion in police circles as to the cause of the crimes and the best way of dealing with the criminals. Deputy Chief Neal, of the State Police, doubts if the outlaws belong to any organization, and says that the leniency with which the courts and district attorneys deal with criminals who use weapons is largely responsible for the conditions. Most of the police chiefs of the State believe the highwaymen are foreign criminals, or men who have seen military service, hence their readiness to use weapons and their accuracy of aim. Chief Frank M. McLaughlin, of Melrose, would have prison doors closed to these men, and have every one caught shot. Chief Henry Birckbank, of Wakefield, would have the State supervise the police, provide plenty of officers, modernize their equipment and organize them so they can work together. City Marshal Joseph W. Dane of Salem says that the police force should be well equipped and taught to shoot straight.

Firemen Will Have Medical Squad

Chester, Pa.—Chief Engineer E. S. Boice, of the Prospect Park Fire Company, who stated at a recent meeting of the organization that he intended to put the firemen through a course of drilling exercises, and who was instrumental in having Council adopt a resolution providing for the appointment of twelve firemen as special officers to police properties in cases of fire, and act in other emergencies, states that it will not be a great while before the company will be able to boast of an electrical force and outfit for placing electric light and trolley wires out of the way of danger, where they prove an obstruction in fighting fires, and also a medical emergency squad which will be trained in the art of temporarily treating burns, cuts and other injuries sustained during a fire. The members of the squad will be taught how to apply lotions and wrap the affected parts in bandages, and will also be shown how to take care of persons sustaining fractured bones and sprains.

City's Fire Loss Breaks Record

Cleveland, O.—Cleveland is having an unusually heavy fire loss this year, according to Charles H. Patton, of the Inspection Bureau. Part of this loss is attributed to incendiarism, due to the hard times. Another cause is the fact that many factories are shut down and unprotected. Tramps break in and fires soon follow. The loss so far this year has been \$500,000, as compared with \$400,000 last year and \$600,000 the year before. The installation of the pumping plant for the high pressure system now used in connection with fireboats is urged as a preventive measure.

Is a Repair Shop a Fire Company?

Newark, N. J.—Although the action of City Auditor Forman in refusing to pass the salary warrants for the new fire captains recently appointed has left the Fire Commissioners in a quagmire of doubt, so to speak, they are asking themselves whether Mr. Forman or they themselves are to say what constitutes a fire company. Mr. Forman has decided that the supply and repair shop at the old fire headquarters is not a fire company, nor the reserve stables. At these two posts the fire commissioners appointed captains, but with the intent and purpose of giving the officers roving commissions.

Organization of an Auto Chemical Company

New Bedford, Mass.—Chief Dahill has requested Council to provide him with an experienced man to run the new automobile chemical apparatus who can not only handle the machine but can also keep it in repair. A new company will be formed at the center house, to consist of four men, while the captain of the center house will be made captain of this company. The men will be permanent men and their duty will be to cover all fires in the new apparatus. The members of the present chemical company will be distributed among other companies. It is proposed to have every man connected with the new company understand how to run the auto and to be qualified to act as driver.

Campaign Levies on Firemen Forbidden

Orange, N. J.—The Orange Board of Fire Commissioners squelched the practice of levying campaign assessments on the members of the Department by passing a resolution, the sense of which is that any man who contributes to either political party will be instantly dismissed if he is found out. The measure was introduced by Commissioner Beegle, who moved that such an act be made a violation of the rules, and President Martin reinforced it by adding the clause that any man who did it should be instantly dismissed. Mr. Beegle said that in the past Aldermen, both Republicans and Democratic, had been making a practice of taxing the men at election time. Mr. Martin added that with all other things he did not think the firemen got enough money to contribute.

To Decide State Police Law

Reno, Nev.—Whether the Nevada State Police law recently passed to protect Goldfield is to remain upon the statute books will be decided by a referendum vote of the people at the November election. Under the laws of this State 10 per cent. of the electors may petition that any measure be submitted to a vote of the people, and the Secretary of State, upon being satisfied that the petitioners are bona fide electors, is compelled to place the proposition upon the ballot. A petition is now being circulated throughout the State to get the required 10 per cent. of the qualified voters.

Low Bids for Hose Under New Specifications

Scranton, Pa.—When bids for 1,000 feet of new hose were opened August 6 in the Department of Public Safety, it was found that some of the bids were lower than any ever submitted heretofore. When the city was under old arrangements the price of hose always was around 90 cents per foot. The low bid in the present lot, sent in by Robinson & Baylor, of Philadelphia, is at 69.3-10 cents per foot. They also give a 10 per cent. reduction if the hose is paid for in thirty days. There were two other bidders, the Penn Sales company, which bid on two brands, one at 78 cents and the other at 79 cents. They also bid on chemical hose at the rate of 35 cents a foot, and were the only bidders on the latter. C. M. Florey, the local agent for the Boston Woven Hose Company, made a bid of 90 cents per foot. The new arrangement whereby these low bids are possible is an agreement that the National Underwriters' Association shall test all hose submitted, and the city making its own specifications for the hose required. Formerly there was no specifications, the city simply asking for a certain kind of hose, which only a few companies could compete on.

GOVERNMENT AND FINANCE

Saving on City Pay Roll

Boston, Mass.—Mayor Hibbard has been furnished by City Treasurer Charles H. Slattery with the pay roll figures for the past week, which show the administration has reduced the pay rolls \$19,015.73 in comparison with the corresponding week of last year. The city paid out \$145,866.03 against \$164,881.76 for the corresponding week of last year, and \$150,788.59 for the same week in 1906.

City Adopts Civil Service Rules

Des Moines, Ia.—An ordinance has been passed establishing civil service rules. It reads, in part, as follows: Any officer or employee in the classified civil service of the city of Des Moines, who, by solicitation or otherwise, exerts his influence, directly or indirectly, to induce other officers or employees of the city to adopt his political views or to favor any particular person or candidate for office, or who shall in any manner contribute money or other thing of value to any person for election purposes, shall be removed from his office or position by the proper authorities. Participation of employees in the classified civil service in partisan politics, except to vote, is contrary to the spirit of the statute and subversive of the best interests of the civil service, and such participation is hereby prohibited.

Legal Debt Limit Ignored

Indianapolis, Ind.—Either bad figuring or bad breaking of law is shown in the reports to the State Statistician by the civil cities of Indiana in answer to the question as to what amount each city in the State might borrow under the law, the amount it had borrowed and the amount it could yet borrow. Five cities show glaring instances of exceeding the debt limit, Evansville having borrowed \$1,300,000 too much. Madison over-borrowed \$150,000. The law says the civil city can borrow two per cent. of its total taxables. The statistician has written for immediate verification of the figures. The belief is that under the law all debts contracted after two per cent. is passed are invalid.

Improvement in Collection of Delinquent Taxes

Pittsburg, Pa.—City Comptroller E. S. Morrow proposes to have a bill presented to the next session of the Legislature providing for important changes in the collection of delinquent taxes and which will increase the revenues of the city. The plan is to place the Collector of Delinquent Taxes on a straight salary of about \$6,000 a year and dispense with the percentage basis. To facilitate collections Comptroller Morrow proposes to make a progressive rate on delinquencies so that the delayed payment of taxes will make the amount to be paid higher in proportion to the delay. Instead of the City Treasurer getting only the sums assessed as at present, it is proposed that the extra tax on delinquents shall go into the treasury, which will mean a considerable increase in revenue.

Save Interest Bill on Improvements

Pittsburg, Pa.—Mayor Guthrie expects the city to save nearly \$50,000 during the present year on interest previously paid contractors on street improvement work through failure to have the work assessed promptly. The brunt of the effort to pay improvement claims more promptly has fallen on the Board of Viewers, and as a result not a member of Chief Clerk John H. Felmuth's force has yet been given a vacation, there being no additional staff to care for the Northside work. The report of the Board of Viewers August 8 shows only 48 contracts completed, on which no viewers have been appointed, as against 170 contracts eighteen months ago, and a total of 101 contracts pending and unpaid, as against 227 in February, 1907. The total amount of completed work on which the contractors are drawing interest is now \$687,896, instead of \$1,345,000. The board is now within a month of the contractors on the work; a year and a half ago it was more than twelve months behind.

Eight-hour Law to Be Enforced

Salt Lake, Utah.—The appearance of inspectors' names on the city payrolls, credited with thirty or more days' work in a month, called the attention of Council to the fact that contractors were working their forces more than the eight hours a day prescribed by law. As the statute makes it a misdemeanor for either the contractors or city officials to countenance more than an eight-hour day, it was decided that hereafter the inspectors would only be paid for eight hours' work and that contractors must confine their work to that period.

Would Incorporate Public Utility Corporations Within State

Seattle, Wash.—If Mayor John F. Miller has his way, the next Legislature of the State of Washington will pass a law providing that in cities of the first class franchises for public utility corporations shall be granted only to corporations which are incorporated in the State of Washington, and therefore directly amenable and answerable to the laws of the State and to the ordinances of the cities in which they enjoy privileges granted by the City Council.

Has No Authority to Issue Deficiency Bonds

Seneca Falls, N. Y.—Last May the taxpayers voted to issue \$22,000 bonds to pay off the deficit in the village treasury, which had been growing from year to year. The firm of New York bankers who purchased the bonds have refused to take them

because the village could not show any legal authority to issue deficiency bonds. The bonds will be advertised again, but it is a question whether there will be any bidders.

Contest Over City Engineer's Office

Sioux Falls, S. D.—Failing to secure the confirmation of his appointment of a successor to L. E. Hendricks, City Engineer, Mayor Doolittle, through City Attorney Grigsby, has seized the books and papers in the office of the engineer and has thrown the affairs pertaining to that office into a deadlock until the cause shall be tried out in the courts. The Mayor has proposed several candidates for the position of City Engineer, but the Council has invariably turned them down by a decisive vote. Recent appointments were S. B. Howe, of Sioux City, and the City Engineer of Mitchell, but the Council gave them but short shrift. At the last meeting of the Council, Mayor Doolittle refused to submit the bill of the City Engineer for services and the Council took up the bill and approved it over the protest of the executive, who now retaliates by seizing the official records of the engineer and likewise refuse to order a warrant drawn for the salary of the Engineer.

Efficient Service Lowers Tax Rate

Utica, N. Y.—At the last monthly meeting of heads of departments held in the Common Council chamber, Mayor Wheeler thanked the members for their presence and for the excellent reports filed. Regarding the tax rate for the year, which has just been computed and shows a reduction of \$3.08 per \$1,000 as compared with the previous year, the Mayor said that the reduction was not caused principally by increased valuations, but by careful economy and the application of strict business principles by the department heads. The low estimates allowed in the budget have not resulted in poorer service in any branch of the city government.

REFUSE COLLECTION AND DISPOSAL

Baltimore's Reduction Plant Progresses

Baltimore, Md.—The Southern Products Company, which concern has the contract for reducing the garbage of Baltimore city for ten years, has finally freed itself of litigation and is making progress in erecting its plant on the land recently bought on Bodkin creek. The company desired to locate nearer the city, but was prevented from so doing by a law passed at the last Legislature fixing the distance within which it must not build, as being within a radius of nine miles from Lazaretto Light. After securing the option on the land on Bodkin creek, the Anne Arundel authorities raised some objections to their locating at that place, but all difficulties have since been overcome and the work will be pushed rapidly. It is stated that the entire plant will be ready for operation within twelve months.

Economy Results from Increasing Load

Boston, Mass.—Superintendent of the Street Department Guy C. Emeson has reported to the Finance Commissioner that a considerable saving of money has been effected in the sanitary division. The greatest economy in this division has been on account of the reduction of the number of superfluous employees and teams and an increase in the average load of garbage hauled, from about 400 pounds to 1,200 pounds. It is evident that the amount of garbage collected during the previous year was greatly over-estimated.

Reduction of Complaints About Garbage

Evansville, Ind.—Fewer complaints regarding the removal of garbage are being received by the Board of Health than ever before. This condition has been brought about by the purchase of two new wagons this year, making the total in use seven. Health Officer Casey says that the principal fault with the present force is that it is impossible to follow any regular schedule, but if he is allowed three more wagons every part of the city could be served twice a week and the downtown hotel sections three times.

RAPID TRANSIT

To Indicate Streets

Cleveland, O.—An automatic street indicator, the latest innovation planned by the Municipal Traction Company, has been installed on the Central and Quincy line. At each stopping place a wire brush contrivance is attached to the trolley wire. A tube of brass will encircle the trolley iron. When the trolley iron passes through the brush the brass will cause an electric contact with an indicator in the car. The street numbers, or avenues, will be printed on canvas around rollers. The roller moves along as the current is delivered down the pole at each station. The automatic indicator is in successful use on the Cincinnati interurban. Should it prove a success on the Central-Quincy line it will be introduced on all Municipal lines, du Pont says. Cleveland men are backing the concern which is turning out the indicator. The company is called the Acme Automatic Indicating Company. George H. Worthington is President, C. W. Johnson, Vice-president, and T. W. Small, Manager.

Trolleys Will Whistle at Crossings

Evansville, Ind.—“Whistle” as a mark of direction and warning to passing trains will not be confined hereafter to steam roads, for the State law and the State Railroad Commission's rulings compel them to be erected also at all station limits and at all road crossings of interurban lines. Acting under the new ruling, the Evansville Railway Company will paint “Whistle” signs on poles on their Mt. Vernon and Rockport lines, to notify motormen to sound warnings at all crossings and at station limits.

Jurisdiction Over Hudson Tunnels Disputed

New York, N. Y.—The officials of the Hudson and Manhattan Railroad Company are inclined to dispute the jurisdiction of the Public Service Commission over those parts of the tunnel routes which lie within this State. For the purpose of being posted properly, should any question arise concerning the regulation of traffic and conditions in the Hudson tunnels, the Commission has asked to be supplied with data similar to those which are furnished to the board by the other roads operating in this city. The Hudson company, however, has refused to comply with these demands on the ground that as it operates between this city and New Jersey it is subject, not to the authority of the Public Service Commission, but to that of the Interstate Commerce Commission. The New York Central and the New Haven roads, which engage in interstate traffic, have never questioned the jurisdiction of the Commission within its own field, and in order to settle the point which has been raised by the Hudson company, George S. Coleman, Chief Counsel to the Commission, was directed to prepare an opinion as to whether or not the officials of the Hudson companies have good grounds for their contention. Mr. Coleman expresses the opinion that the Commission has jurisdiction over the company and that subject to the action of Congress and the State can require the railroad to guard against accidents, regulate the holding of stock and insist upon adequate appliances. The mere fact that a corporation is engaged in interstate commerce does not permit it to usurp special franchises for that purpose.

Abandoned Tracks May Annul Franchise

Portland, Ore.—Because the Portland Railway, Light and Power Company has abandoned various lines of railway on streets in this city after they have been in active operation, the corporation may have forfeited the franchises of which the lines abandoned were a part. This is the belief of Councilmen Kellaher and Rushlight, members of Mayor Lane's franchise committee, which met to discuss the opinion of City Attorney Kavanaugh, recently given, in regard to the liabilities of the Portland Railway, Light and Power Company under its franchises. The clause of the opinion on which the two Councilmen base their contention is: “The company has no authority to surrender portions of its active franchise on streets on which the tracks have been laid without surrendering all.” If it is

found that the abandonment of the various lines has been undertaken without the consent of the City Council or other authority, the committee will recommend to the Mayor that the franchises affected are revocable, and the Mayor will in turn convey this information to the City Council. Such action, it is believed by the committee, will force the corporation to seek a new blanket franchise, covering all its various lines in this city now operated under numerous grants.

Traction Franchises Made Uniform

Sioux City, Ia.—In a light vote the ordinance unifying the various franchises of the Sioux City Traction Company and granting an extension of twenty-five years was adopted by 1,500 majority. Under the terms of the franchise the company is to pay two per cent. of its gross earnings when the city shall have attained a population of 75,000.

MISCELLANEOUS

Medical Ordinance More Stringent Than State Law

Butte, Mont.—A bill for an ordinance has been introduced in Council which is understood to meet with the favor of the Silver Bow Medical Association, and which provides measures more stringent than those of the State law of the last Legislature for the regulation of the practice of medicine. The bill is for an ordinance to tax practising physicians of all schools, the amount of the tax being left blank. The bill provides that after a physician has secured a license from the State Board this must be presented to the City Clerk of the city of Butte and must be registered in a public record. The license will then be issued, but may be withdrawn as soon as the license is revoked by the State Board. On the license must be the individual name of the person desiring the license, and no firm or corporation name, and the license is not to warrant any but the person named to practice. The license so secured must be posted in a conspicuous place about the office or waiting room of the physician.

Wants City Names Painted on Roofs

Chicago, Ill.—Plans were adopted by W. H. Pickens, of Chicago, Director of Contests for the Federation of American Aero Clubs, to write letters to the Mayor of every city of importance in the United States and Canada, asking them to use their influence to have the name of the city painted on the roof of the largest building in the city. This does not mean the tallest building, but the one presenting the largest expanse of roof. The letters will say that ballooning and balloon racing will be so popular that within a short time it will be almost a necessity that this be done, for the safety of the pilots and passengers of the balloons, so they may know their location.

Elizabeth Downs Voting Machines

Elizabeth, N. J.—The citizens have disapproved the voting machine device in all excepting one of the ten districts. In the first district of the Fifth Ward the advocates of the retention of the machine could only muster five votes out of the 121 cast. One district by the narrowest of margins registered in favor of the machine's retention. The second district of the Eleventh Ward, a Republican stronghold, was the one which, contrary to all expectations, voted against the restoration of the paper ballot, the vote standing 40 for the machine and 35 against.

Board of Health Bars Go-Carts Without Springs

Harrison, N. J.—Springless baby carriages and go-carts have come under the ban of the Board of Health, which has adopted a resolution condemning them on the ground that their bumps and jars have such effect on the backs of children that in many cases spinal trouble results. There is considerable speculation in Harrison concerning the methods the Board will use to do away with springless carts.

Would Stop Concrete Bridge Work

Goshen, Ind.—An injunction based on claims of irregularities in proceedings has been asked forbidding the construction of 16 concrete bridges. The action is the result of the contest between iron and concrete bridge interests.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Municipal Interest

CHANGE OF GRADE—DAMAGES

Scharfenberg vs. Town of New Decatur.—An owner of property abutting on a street is not estopped from claiming damages for a change of the grade because he petitioned therefor, on it appearing that the petition was not acted on and accepted, though the plan adopted for the change of grade was the only scientific method possible. Where an owner of property abutting on a street had a conversation with the agents of the city, after it had entered into all its contracts and incurred all its liabilities respecting the improvement of the street at the grade established, and before the city altered its position in consequence of the conversation the owner retracted it, the owner was not estopped from claiming damages for the change of grade.—Supreme Court of Alabama.

CHANGE OF GRADE—DAMAGES

Nugent vs. City of New York et al.—On a change of grade in a street the damages accrue at the time of the actual physical change, and the award must be given to the one owning the premises at that time. Where a husband acts for his wife on the sale of real estate his authority will be presumed from her signing the contract and executing the deed in accordance therewith, but such authority will not be presumed to extend to a transfer of a claim for damages already accrued by reason of the change of grade of an adjacent street where such claim is not mentioned in the contract of sale or the deed.—New York Supreme Court.

STREET IMPROVEMENT—SET-OFF

Nickels vs. Board of Councilmen of City of Frankfort.—In a suit against a lot owner to enforce a lien for street improvements, a plea of set-off alleging that, in making the improvement, the grade of the sidewalk had been changed so that it was raised above the level of defendant's lot, which necessitated his filling in his lot to avoid the creation of a pond in it, which cost him a certain sum, was insufficient, in that it failed to show damage or that the grade on which the street was rebuilt was not the one established as required by the City Council.—Court of Appeals of Kentucky.

ADVERTISING WAGONS IN STREETS

Fifth Avenue Coach Co. vs. City of New York.—Greater New York Charter, empowering the Aldermen to regulate the use of streets and the exhibition of advertisements or handbills, and to establish ordinances to that end, is sufficient authority for an ordinance prohibiting advertising wagons in the streets as against a corporation organized to run stages in the city of New York while attempting to exercise unauthorized privileges by renting the exterior of its stages for advertising purposes.—New York Supreme Court.

STREET OBSTRUCTIONS—STONE

Orser vs. City of New York.—In an action for injury to a pedestrian who fell over a stone in the street, whether the stone had been at the place of accident a sufficient length of time to give constructive notice to the city held for the jury. The mere fact that a stone in the street, over which a pedestrian fell and was injured, had been in different positions, did not prevent there being notice to the city that the stone was in the street and a menace to travelers. A variance between the evidence, in an action for injury to a pedestrian, who fell over a stone in the street, and was injured, and the allegations of the complaint, as to the particular corner where the stone was, is not important, and, all the evidence on that point having been received without objection, the complaint may be deemed to have been amended in harmony therewith.—New York Supreme Court, Appellate Division.

SIDEWALK ORDINANCE—VALIDITY

Morey et al. vs. City of Buffalo.—Buffalo City Charter, Laws 1895, provides that any owner or occupant of premises, whenever such work is ordered by a resolution of the City Council, shall lay and relay sidewalks in front of such premises, and requires the Commissioner to notify the owner of any premises in front of which such work is required to be done. The ordinances of the city provide that, on notice from the Board of Public Works or the Common Council, it shall be the duty of the person notified to lay sidewalks, etc., the ordinance being enacted in 1892 and the charter in 1895. Held, that the ordinance was in conflict with the charter, the latter requiring the work to be ordered by resolution of Council, and hence the ordinance was invalid.—New York Supreme Court.

OBSTRUCTION IN SEWERS

Katzenstein et al. vs. City of Hartford.—A city whose charter requires it to cause prompt repairs of public sewers is not an insurer against injuries to property from obstruction in a sewer; and, where property is damaged by a setback of sewage through a lateral drain, by reason of a stoppage in the main sewer, and the owner incurs expenses to demonstrate to the city's agents that his lateral drain is clear, he cannot recover the damages and expenses resulting from the city's failure to remove the obstruction, unless the city negligently failed to make the necessary repairs after it had notice of such obstruction.—Supreme Court of Errors of Connecticut.

SEWERS—NUISANCES

State vs. City of Concordia.—The power granted to cities of the second class to build and maintain sewers does not warrant the commission of a public nuisance through their agency. The statute of 1887, providing that cities of the second class may exercise the right of eminent domain in order to connect sewers with creeks, rivers and ravines, does not warrant the commission of a public nuisance as the result of such connection. In planning and in maintaining systems of sewerage, cities of the second class must make due provision against public nuisances resulting from occurrences naturally and reasonably to be anticipated.—Supreme Court of Kansas.

DISPOSAL PLANT—LOCATION

Frelinghuysen et al. vs. Town of Morristown et al.—It is not necessary for an incorporated town, which is acting under the sewer act of 1902, to secure the consent of another municipality to the erection of sewage disposal works within the territorial limits of the latter, nor is such consent made necessary by the act of 1907.—Supreme Court of New Jersey.

REGULATION OF DAIRIES

City of New Orleans vs. Charouleau.—Power "to maintain the city's cleanliness and health, and to this end to regulate the location of, and the inspection and cleaning of, dairies, * * * and to adopt such ordinances and regulations as shall be necessary or expedient for the protection of health and to prevent the spread of disease," is a plenary delegation of police power in connection with the police of dairies, and invests the City Council with all the authority which the State itself is possessed of to require dairy cows in a large city to be inspected, and, if found to be affected with tuberculosis, to be destroyed, without compensation to the owner. It being shown that tuberculosis in a cow may be ascertained by a practically infallible test, and it being further shown that the presence of a cow so affected in a dairy in a city is a serious menace to the public health, the public authorities have the same right to require the destruction of such cow without compensation to the owner and without judicial inquiry as they have to require the destruction of decayed fish, meats and vegetables. The City Council may exercise its police power through the agency of boards or inspectors.—Supreme Court of Louisiana.

CONDEMNATION OF WATER WORKS

Village of Waverly vs. Waverly Water Co. et al.—Village Law, Laws 1897, require the Board of Trustees of a village to exercise the functions of a Board of Water Commissioners, and authorize the Board of Water Commissioners to purchase a system of water works, and, if it cannot agree with the owner thereof, it may acquire the same by condemnation. The Code of Civil Procedure provides that the petition for condemnation shall show that plaintiff has been unable to agree with the owner of the property for its purchase, and the reason of such inability. The Board of Trustees of a village adopted and submitted to a water company a resolution for the purchase of the water plant of the company for a specified sum. No answer was made by the company. The village subsequently requested the company to make an offer, which it neglected to do, and it refused to enter into negotiations with the village. Held to show inability of the village to agree with the company on a price, authorizing the institution of condemnation proceedings. General Municipal Law, Laws 1892, providing that an ordinance of a municipal corporation creating a funded debt shall provide for the raising annually by tax a sum sufficient to pay the interest and principal, is not applicable to a resolution adopted by the taxpayers of a village for the purchase of a water works system, for a provision for a tax can only be made for a debt certain and definite.—New York Supreme Court, Appellate Division.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Buildings, Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Street Improvements				
Indiana	Danville	August 27, 10 A.M.	Constructing highway	Board of County Commissioners.
New York	New York	August 27, noon	Repairing asphalt pavements	Allen U. Spooner, Com'r of Docks.
New York	New York	August 27, 3 P.M.	Constructing cement curb and sidewalks in park at Westerleigh.	Henry Smith, Pres. Park Board.
New Jersey	Westfield	August 27, 8:15 P.M.	Vit. brick on 6-in. concrete, e. tc., Broad St. & Westfield Ave.	Lloyd Thompson, Town Clerk.
North Dakota	Fargo	August 27	Reparing with creosote block or vitrified brick.	N. C. Morgan, City Auditor.
New York	New Brighton	August 27	Constructing cement curb and sidewalk.	Henry Smith, Pres. Park Board.
Ohio	Akron	August 27	Paving two streets.	R. F. Hamlin, Sec'y Bd. Pub. Serv.
Ohio	Upper Sandusky	August 27	Grading and improving a number of roads.	J. N. Traxler, County Auditor.
Ohio	Coshocton	August 27	Constructing vitrified block pavement.	Board of Public Service.
Illinois	Aurora	August 27	Constructing asphalt pavement.	E. C. Finch, Chm. Bd. Local Imp.
Ohio	Cincinnati	August 28, noon	Improving Duck Creek road from city line to Dearfield road.	Stanley Struble, Pres. Co. Com'rs.
New Jersey	Mt. Vale	August 28, 8:30 P.M.	Constructing 7,760 sq. yds. macadam.	John B. Hering, Borough Clerk.
Indiana	Indianapolis	August 28	Constructing portion of Fall Creek boulevard.	Bd. of Park Commissioners.
Ohio	Youngstown	August 28	Grading and macadamizing 2 miles of road.	Board of County Commissioners.
Pennsylvania	Greenfield	August 28	Constructing 7,500 sq. yds. brick paving, 6,000 lin. ft. concrete curb and gutter.	P. E. Zimmerman, City Clerk.
Ohio	Columbus	August 28	Permanent roadway on Central College bridge	John Scott, Clk. Bd. of Co. Com.
Pennsylvania	Harrisburg	August 29, noon	Constructing pavement and curbing on Green St.	W. W. Caldwell, Com'r.
Indiana	Williamsport	August 29, 3 P.M.	Constructing 12,000 feet of gravel road in Kent Township.	R. L. Winks, County Auditor.
Indiana	Anderson	August 29	Grading, graveling or macadamizing 21,098 feet of highway.	M. J. Brown, Chm. Bd. of Co. Comrs.
Indiana	Noblesville	August 29	Grading, draining and graveling sundry roads.	N. W. Cowgill, County Auditor.
Indiana	Evansville	August 29	Constructing brick paving in alleys for 9 blocks.	Walter Wunderlich, City Bd. Pub. W.
New York	Mineola, L. I.	August 31, 10 A.M.	Gen. improvement, Flower Hill Ave., Port Washington.	Wm. H. Luyster, Clk. Bd. Sup'v'rs.
Ohio	Portsmouth	August 31, noon	Constructing earth filler over arched culvert.	County Commissioners.
Wisconsin	Oshkosh	August 31, noon	Constructing cedar block pavement with cement curb and gutter on 13th street.	W. A. Marden, Chm. Bd. Pub. Wks.
Sask. Can.	Regina	August 31, 4:30 P.M.	Constructing a grade across Reed Lake, 20,000 cu. yds. earth.	F. J. Robinson, Deputy Com'r Dept. Public Works.
New York	Fort Edward	August 31, 8 P.M.	Paving portions on Broadway and East St. with brick, asphalt or other material.	Board of Trustees.
Wisconsin	Appleton	August 31	Paving Lake St.	McClellan Dodge, City Engineer.
New York	Port Washington	August 31	5,600 sq. yds. macadam, 6,400 lin. ft. concrete curb and gutter, 2,015 lin. ft. concrete curb and brick gutter, 2,800 sq. ft. sidewalk.	Wm. E. Luyster, Clk. Bd. of Co. Supervisors.
New York	Johnstown	August 31	11,164 sq. yds. Clearfield brick pavement, 4,826 lin. ft. stone curb, radius curb, etc. (all bids received Aug. 3rd rejected)	Frank Bogaskie, City Clerk.
Indiana	Crawfordsville	August 31	Constructing cement curb gutter.	Henry B. Hulett.
Iowa	Chairton	August 31	Constructing 3 blocks of vitrified brick paving on concrete foundation; also cement curb	J. D. Threlkeld, City Clerk.
New York	Freedonia	August 31	Reparing with asphalt.	Harry B. Espy, Clk. Village Trustees.
Ohio	Columbus	August 31	Constructing brick pavement on several streets and alleys.	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Ohio	Toledo	August 31	Constructing brick sheet asphalt of creosoted wood pavement on Putnam St.	Reynold Voit, Sec'y Bd. Pub. Serv.
Indiana	South Bend	September 1, 10 A.M.	Constructing curbing and sidewalk	W. A. McNery, Chm. Dept. P. W.
Texas	Beaumont	September 1, 10 A.M.	Constructing 17,633 yds. vitrified brick pavement and 7,307 lin. ft. concrete curb.	J. G. Sutton, City Sec'y.
Ohio	Defiance	September 1, noon	Paving certain streets with brick on concrete base	M. J. Walls, Clk. Bd. Pub. Service.
Maine	Richmond	September 1, 2 P.M.	Constructing 700 lin. ft. of state road.	Morrill McKenney, Chm. Selectmen.
Kansas	Caney	September 1, 5 P.M.	Constructing 21,780 sq. yds. brick paving.	Mary E. McMillan, City Clerk.
Nebraska	Omaha	September 1	Constructing pavements of asphalt, stone, vitrified brick, artificial stone and macadam.	Dan B. Butler, City Clerk.
Pennsylvania	Philadelphia	September 1	Constructing pavement in connection with grade crossing work.	Geo. R. Stearns, Dir. of Public Wks.
Ohio	Fostoria	September 1	Constructing pavement and curbing.	Frank Whitlock, City Clerk.
New York	L. I. City	September 1	Reparing with granite block on broken stone and concrete foundation; constructing 70,755 sq. yds. asphalt block pavement, 1,000 sq. yds. macadam, 3,200 lin. ft. curb stone reset.	Lawrence Gresser, Boro. President.
Mississippi	Pasagoula	September 2, 9 A.M.	Constructing 100,000 sq. ft. concrete sidewalk, 20,000 lin. ft. concrete curb and gutter and necessary crossings and culverts.	Walter G. Kirkpatrick, Jackson, Miss. Board of Trustees.
New Jersey	Jamesburg	September 2, 10 A.M.	Constructing macadam road in the grounds of the State House.	Bird S. Coler, Borough President.
New York	Brooklyn	September 2, 11 A.M.	Constructing sheet asphalt block and granite pavement on certain streets.	Mayor.
Georgia	Dublin	September 3, 8 P.M.	Laying 17,000 sq. yds. of vitrified brick; one block bit. paving.	W. H. McMillin, Clk. Bd. Pub. Wks.
Ohio	Youngstown	September 3	Paving one street.	Village Clerk.
Ohio	Wauseon	September 4	Constructing brick block asphalt on imperial pavement.	Stanley Struble, Pres. Bd. Co. Com.
Ohio	Cincinnati	September 4	Paving several streets.	Fred Dreihls, Clk. Bd. Co. Com'rs.
Ohio	Cincinnati	September 4	Repairing two roads.	Lieut. L. E. Hohl, Const. Q. M.
Wyoming	Fort McKenzie	September 5, 10 A.M.	Constructing macadam roads, curbs, drains and gutter.	E. P. Fitzgerald, Chm. of Pub. Wks.
Wisconsin	Fond-du-Lac	September 5, 3 P.M.	Constructing cement pavement.	N. G. Wallace, County Auditor.
Indiana	Terre Haute	September 5	Macadamizing the McClintock Road.	W. H. Nichols, County Auditor.
Indiana	Danville	September 7, 10 A.M.	Constructing 11,000 ft. of gravel road in Washington Twp.	C. D. Lewton, County Auditor.
Indiana	Decatur	September 7, 10 A.M.	Constructing 2 macadam roads.	Clinton Gardner, County Auditor
Indiana	Liberty	September 7, 2 P.M.	Constructing gravel road in Union Township.	County Auditor.
Minnesota	Mankato	September 7, 2 P.M.	Constructing Rapidan Mills Hill Road.	W. N. Temple, City Clerk.
Iowa	Osceola	September 7	6,500 sq. ft. cement sidewalk.	C. E. Ryker, Chm. Co. Com'rs.
Indiana	Tipton	September 7	Constructing gravel roads.	John T. Scott, County Auditor.
Indiana	Vincennes	September 8, 2 P.M.	Constructing 4,972 feet gravel road in Vincennes Twp., 104,602 ft. in Decker Twp., 5,565 ft. in Washington Twp.	B. E. Thornburg, County Auditor.
Indiana	Martinsville	September 8	Constructing 19,639 ft. gravel road.	Thos. J. Stearns, Chm. Co. Com'rs.
Indiana	Corydon	September 8	Constructing gravel on macadamized road.	H. A. Henderson, County Auditor.
Indiana	Rockville	September 8	Constructing 2 gravel roads.	C. Benedict, Chm. Co. Com'rs.
Florida	Jacksonville	Sept. 9, 10:30 A.M.	Constructing 1 mile of pavement.	Sam'l M. Kerr, County Auditor.
Indiana	Bloomington	September 9	Constructing macadamized road.	Joseph E. Davis, County Auditor.
Indiana	Muncie	September 9	Constructing gravel, crushed stone and brick roads.	John P. Foreman, County Auditor.
Indiana	Lafayette	September 10, 10 A.M.	Constructing gravel roads.	W. S. Bullock, Pres. Bd. Local Imps.
Illinois	Waukegan	September 11, 8 P.M.	Paving 1 mile of Marion St. with brick.	Stanley Struble, Pres. Bd. Co. Com.
Ohio	Cincinnati	September 11	Constructing gravel road.	Wm. F. Black, County Clerk.
Ohio	Columbus	September 12	Grading and improving river road.	Chas. F. Cromwell, County Auditor.
Indiana	Frankfort	September 14, 2 P.M.	Constructing 29 gravel roads.	W. E. Skeggs, Judge of Probate.
Alabama	Decatur	September 4	Constructing system of macadam roads, cost about \$240,000.	John W. Weaver, County Auditor.
Indiana	Huntington	September 18	Constructing gravel road, 15,432 ft. long.	
Water Supply				
New York	New York	August 26, 2 P.M.	Furnishing and delivering c. i. pipe and special castings.	John H. O'Brien, Com'rs W. Supply.
Kansas	Cottonwood Falls	August 26, 5 P.M.	Constructing complete water works system.	R. O. Miner, Mayor.
Michigan	Owosso	August 26	Furnishing two Scotch marine boilers, 200 H.P.	Bd. of Public Works.
Indiana	Rockville	August 26	Constructing pumping station and plant; also 2½ miles 6 and 8-inch c. i. pipe.	Dick H. Ott, Pres. Bd. of Trustees.
Texas	Galveston	August 27	Furnishing and constructing c. i. water main across ship canal.	John D. Kelly, City Secretary.
Minnesota	Brainard	August 27	Constructing dam and hydro-electric plant, power pumping plant, c. i. pipe hydrants, valves, etc.	H. J. Spencer, City Clerk.

Water Supply—Continued

North Dakota	Fargo	August 27	Constructing 6-inch water mains.	N. C. Morgan, City Auditor.
New York	Buffalo	August 28	Installing 75 H.P. automatic Skinner engine.	F. G. Ward, Com'r of Public Wks.
Florida	Ft. Barrancas	August 29, 11 A.M.	Bldg. or reldg. steel trestle and bldg. steel water tank.	Capt. D. W. Hand, Q. M., U. S. A.
Connecticut	Wallingford	August 31, 8 P.M.	Laying water mains.	Board Water Commissioners.
Oregon	Portland	August 31, 11 A.M.	Excavating and constructing concrete and masonry work for the Dalles-Cilo-Canal.	Maj. J. F. McIndoe, U. S. A.
Connecticut	Meriden	August 31	Furnishing pipe for Lane Pond water supply.	Board of Water Commissioners.
New York	New York	September 1, 11 A.M.	Constructing 3 miles of plain concrete conduit, 17 ft. high and 17½ ft. in width inside; \$225,000 bond.	John H. O'Brien, Com'r W.S., G.&E.
Illinois	N. Chicago	September 1, noon	Constructing water supply intake, crib, pump well and auxiliary piping at the naval training station.	J. E. Pillsbury, Chief Bureau of Navigation, Washington, D. C.
Ohio	Cincinnati	September 1, noon	Cleaning cast iron pipe and valves.	John J. Wenner, Clk. Bd. Pub. Serv.
Utah	Salt Lake City	September 1, 2 P.M.	Constructing reservoir dam, 230,000 cu. yds.; earth work, 6,000 cu. yds. rip-rap; also spillway, 120,000 cu. yds. earth work, with timber regulating gates.	Wm. T. Lynch, Pres. Bd. Land Com.
Illinois	Winnetka	September 1, 8 P.M.	Furn. material, etc., and bldg. mech. filter plant, inc. filters, 1,000,000 gals. coagulation basins, clear water reservoir and housing plant; rein. concrete required where practicable.	W. B. McIlvaine, Village Pres.
Alabama	Russellville	September 1	Constructing water and light plant.	W. H. Austin, Town Clerk.
Utah	Marysville	September 1	Constructing reservoir, involving 230,000 cubic yards of earth work.	State Bd. of Land Com'rs, Salt L. Cy.
Iowa	Earlham	September 1	Constructing water works and electric light plant, about \$17,000.	J. R. Thomson, Mayor.
Ohio	Cincinnati	September 1	Cleaning cast iron mains.	Robt. Laidlaw, Pres. Bd. Pub. Serv.
Maine	Livermore Falls	September 1	Laying cast iron pipe and building reservoir.	Metcalf & Eddy, Boston, Mass.
Massachusetts	Boston	September 2, 2:30 P.M.	Laying 12,400 lin. ft. c. i. water pipe in Boston and Brookline.	Henry H. Sprague, Chm. Met. Water Board.
Illinois	Warsaw	September 2	Constructing water works.	A. H. Worthen, City Clerk.
South Dakota	Platte	September 2	Furnishing and erecting steel water tower with tank and 11,424 ft. 4, 6 and 8-in. mains.	W. F. Vander Vort, City Aud.
Texas	Ft. Sam Houston	September 3, 11 A.M.	Constructing water system for addition.	L. J. Fleming, Constr. O. M.
Pennsylvania	Philadelphia	September 3, noon	Furnishing apparatus for cleaning slow sand filters.	Geo. W. Stearns, Dir. Pub. Wks.
Massachusetts	Manchester	September 4	Erecting 60 x 70 ft. steel stand pipe.	F. J. Merrill, Chm. Bd. Water Com.
Georgia	Ft. McPherson	September 4, 11 A.M.	Sinking one or two 8-inch tubular deep wells.	Lieut. W. E. Holliday, Const. Q. M.
Alabama	University	September 7, noon	Construction of water works system.	Dr. John W. Abercrombie, Pres.
Kansas	Holyoke	September 8	Constructing water works, about \$12,000.	F. A. Wesley, City Clerk.
Michigan	Muskegon	September 8	Furnishing 6 million gallon pump.	B. H. Tellman, City Recorder.
Massachusetts	Springfield	September 9, 2 P.M.	Furnishing and laying about 12 miles of 42-inch pipe.	E. Lockridge, Chief Engineer.
Oregon	Portland	September 11	Furnishing 500 fire hydrants.	Harry Lane, Mayor.
Arizona	Morenci	September 16, 9 A.M.	Laying 25,000 feet 10-in. wrought steel pipe.	Morenci Water Co.
Indiana	Evansville	September 24, 7 P.M.	Constructing municipal filter plant; cost, \$225,000.	W. M. Madden, Clk. Water Board.
Louisiana	Harrisburg	October 5	Drilling 4-inch artesian well.	H. W. Bethard, Sec'y Police Jury.
Brit. Columbia	Vancouver	October 14, 4 P.M.	Supplying c. i. pipes, steel pipes and Ludlow Water Hydrants.	W. McQueen, City Clerk.

Sewerage

Minnesota	Montevideo	August 27, 10 A.M.	Constructing ditch, 292,210 cu. yds. excavation and laying 4,100 ft. of 10-in. and 6,000 ft. of 12-in. tile.	F. J. Rubertus, County Auditor.
Kansas	Ft. Leavenworth	August 27, 11 A.M.	Constructing storm water and subsoil drain.	Capt. Wm. D. Davis, Const. Q. M.
New York	Seneca Falls	August 27, 4 P.M.	Constructing septic tank and appurtenances.	John M. Quion, City Clerk.
Oklahoma	Paul's Valley	August 27, 4 P.M.	Constructing 5.8 miles 10, 12, 15-in. vitrified pipe.	L. W. Wettermark, City Clerk.
Indiana	Ft. Wayne	August 27, 7:30 P.M.	Constructing brick sewer.	H. W. Becker, Clk. Bd. of Pub. Wks.
Ohio	Akron	August 27	Constructing sewer.	R. F. Hamlin, Sec'y Bd. Pub. Serv.
Minnesota	St. Paul	August 27	Constructing sewer.	B. L. Gorman, Clk. Bd. Pub. Wks.
Minnesota	Sauk Center	August 28, 9 A.M.	Constructing a district sewer.	J. F. Cooper, City Clerk.
Illinois	Chicago	August 28, noon	Installing drainage system in municipal playground.	A. W. O'Neill, Sec'y Special Park Commission.
Wisconsin	Waukegan	August 28, 2 P.M.	Constructing sewer in 3 streets.	John P. Dey, Chm. Bd. of Pub. Wks.
New Jersey	Rutherford	August 28, 8 P.M.	Constructing 24-in. clay pipe drain in Park Ave.	F. A. Steadman, Borough Clerk.
Colorado	Durango	August 28, 9 P.M.	Bldg. 12 sanitary sewers, with spurs, branches, etc., Dist. 2.	Herman Berndt, Mayor.
Ohio	Dayton	August 28	Constructing 10,150 ft. 4 to 6-in. drain tile, 14,550 ft. 8 to 18-in. pipe sewer and 1,350 ft. 30-in. concrete sewers.	W. A. Budroe, Clk. Bd. Pub. Serv.
Minnesota	Redwood Falls	August 29, 2 P.M.	Constructing tile and open ditch.	L. P. Larson, County Auditor.
Colorado	Sterling	August 31, 9 A.M.	Constructing 60,000 ft. of 8 to 18-in. pipe sewers.	Chas. F. Silver, Town Clerk.
New Jersey	New Brunswick	August 31, 8 P.M.	Laying 2,000 ft. 15-in., 3,000 ft. 10-in. sewer pipe.	John S. Kemp, Street Commissioner.
Pennsylvania	Wilkes-Barre	August 31	Constructing sewer in Union St.	Clark Borough Council.
Ohio	Frazersburg	August 31	Constructing drainage sewer 2,125 ft. long of 18-inch clay pipe.	Village Clerk.
Vermont	St. Albans	August 31	Constructing sewers and appurtenances.	N. N. Atwood, Mayor.
Ohio	Youngstown	August 31	Constructing sewer.	W. H. McMillin, Clk. Bd. Pub. Wks.
Ohio	Jackson	September 1, 1 P.M.	Constructing 1.4 miles sanitary sewer; cost \$10,000.	J. W. Turner, Village Eng'r.
Pennsylvania	Dunmore	September 1, 6 P.M.	Constructing Grove street sewer.	Sec. of Council.
Pennsylvania	Catawissa	September 1	Constructing 850 ft. of 8-in. sewer pipe.	Borough Clerk.
Kansas	Lawrence	September 1	Constructing main sanitary sewer, 6,000 ft. 12-in. clay pipe sewer, with two brick manholes; also storm water sewer, 1,500 ft. of 15-in. clay sewer pipe and two manholes.	F. D. Brooks, City Clerk.
Louisiana	New Orleans	September 1	Furnishing sewer pipe, brick, cement, etc.	Sewer and Water Board.
New York	Brooklyn	September 2, 11 A.M.	Constructing sewers in Prospect Place.	Bird S. Coler, Borough Pres.
Texas	Ft. Sam Houston	September 2	Constructing sewer and drainage system in new addition.	Constructing Q. M.
New Jersey	Point Pleasant	September 3	Constructing 4 miles of 6 to 12-in. vitrified sewer.	City Clerk.
Indiana	Hartford City	September 4, 2 P.M.	Constructing 2,716 ft. of 12 and 14-in. tile ditch.	Wm. Harley, County Surveyor.
Pennsylvania	North Braddock	September 4, 3 P.M.	Constructing sewer in Maple Ave.	C. A. Stewart, Borough Engineer.
Ohio	Dayton	September 4	Constructing storm sewers.	W. A. Budroe, Clk. Bd. Pub. Serv.
Ohio	Lorain	September 5, noon	Constructing lateral sewers.	John Gard, Pres. Bd. Pub. Service.
Indiana	Evansville	September 5	Constructing pipe sewers in 7 blocks.	Walter Wunderlich, City Clerk.
Mississippi	Vicksburg	September 7, 8 P.M.	Furn. material and laying system of house sewers, inc. 30 miles 8 to 27-in. pipe or concrete sewers, 400 manholes, 100 flush tanks; W. G. Kirkpatrick, C. E. Jackson, Engineer.	Board of Aldermen.
South Dakota	Mitchell	September 7, 8 P.M.	Constructing storm water sewer.	L. L. Ness, City Auditor.
Iowa	Cresco	Sept. 7, 8:30 P.M.	Constructing 2,875 ft. sewer, 6 manholes and 1 flush tank.	H. G. Addie, Chm. Sewer Com'n.
Dist. of Col'bia	Washington	Sept. 8, 10:30 A.M.	Furnishing drain tile.	Capt. F. C. Boggs, Ist. Chm. Com'n.
Wisconsin	Hudson	September 8, 8 P.M.	Constructing sewer on Second street.	A. Karras, City Clerk.
Iowa	Estherville	September 8	Constructing county drain.	Roy J. Ridley, County Auditor.
New Jersey	Hackensack	September 8	Constructing sewer.	C. Linkroum, Pres. Imp. Com'n.
New York	Brooklyn	September 9	Constructing 3 sewers.	Bird S. Coler, Borough Pres.
Pennsylvania	Pittsford	September 11	Constructing 8-in. sewers in four streets.	Harrop, Hopkins & Taylor, B'ro. Eng's.
Dist. of Col'bia	Washington	September 14, noon	Constructing section C of East Side intercepting sewer.	District Commissioners.
Dist. of Col'bia	Washington	September 14, noon	Furnishing two vertical compound engines at the sewerage pumping station.	Com'rs District of Columbia.
Illinois	Peoria	September 15	Constructing sewer; estimate cost, \$230,000.	I. J. Levinson, Sec'y Bd. of Loc. Imp.
Ecuador	Guayaquil	December 1	Constructing sewerage system.	International Bureau of Am. Republics, 2 Jackson Place, Wash't'n.

Bridges

Washington	Spokane	August 27	Bldg. reinforced concrete bridge, \$74,000.	J. T. O'Brien, Sec'y Bd. Pub. Wks.
New York	Waterford	August 27	Constructing plate girder bridge over Champlain Canal at Mohawk St.	F. C. Stevens, Supt. Pub. Wks. Alb'y.
Ohio	Steubenville	August 28, noon	Constructing substructure in Salina township.	J. M. Reynolds, County Auditor.
Pennsylvania	Towanda	August 28, 2 P.M.	Constructing superstructure of a bridge.	David A. Keefe, Eng., Athens, Pa.
Ohio	Columbus	August 28, 2 P.M.	Constructing roadway on Central College Bridge.	John Scott, County Clerk.
Michigan	Grand Rapids	August 28, 8 P.M.	Furnishing and laying joist and sidewalk plank for Pearl Street bridge.	Sam'l A. Freshney, Sec'y Bd. P. W.
Ohio	Ironton	August 28	Bldg. substructure of bridge in Salina Twp.	J. M. Reynolds, County Auditor.
Ohio	Napoleon	August 28	Bldg. approach to Damascus bridge.	County Auditor.
Pennsylvania	Harrisburg	August 29, noon	Constructing reinforced concrete bridge over Paxton Creek at Hemlock St.	W. W. Caedivell, Com. H'w'y Dept.
Illinois	Bushnell	August 29, 1:30 P.M.	Bldg. bridge 32-ft. span, 11-ft. roadway.	W. W. Sealey, Town Clerk.
Indiana	Indianapolis	August 29	Bldg. five concrete culverts.	County Commissioners.
Ohio	Lima	August 29	Bldg. steel bridge; also draw bridge.	C. W. Johnston, Chm. Bd. Co. Comrs.
South Dakota	Plankinton	August 31, 1 P.M.	Erection of 3 24-ft. steel I-beam bridges with concrete backing and wings, and 1 60-ft. steel truss bridge.	A. F. Herrick, Chm. Co. Com'rs.
Cuba	Havana	August 31, 2 P.M.	Bldg. viaduct over Almendares river; Wm. Barclay Parsons, N. Y. City.	Governor, Province of Havana.

Bridges—Continued

Iowa.....	Council Bluffs...	August 31, 4 P.M....	Bldg. reinforced concrete bridge.....	A. W. Casady, City Clerk.
Georgia.....	Rome.....	August 31.....	Construction of steel highway bridge, 300 ft. long, across Etowah river.....	J. R. Cantrell, Chm. Bd. of Com'rs.
Ohio.....	St. Clairsville.....	August 31.....	Bldg. sub and superstructures of several county bridges.....	A. W. Beatty, County Auditor.
Montana.....	Missoula.....	September 1, 10 A.M....	Bldg. bridge over Missoula river 42 feet wide.....	W. H. Smith, County Clerk.
Massachusetts.....	Russell.....	September 1, 2 P.M....	Furnishing superstructure of bridge over Westfield river; 2 spans 122 ft. long, roadway 20 ft, side walk 5 ft.....	H. C. Parsons, Chm. Bridge Committee.
Georgia.....	Hawkinsville.....	September 1.....	Bldg. bridge 230 ft. long over creek.....	J. T. Holder, County Clerk.
Minnesota.....	Two Harbors.....	September 1.....	Constructing 80-ft. span steel bridge over Beaver river; cost, about \$4,500.....	County Auditor.
North Dakota.....	Fargo.....	September 2, noon....	Bldg. one 30-ft. and one 40-ft. bridge.....	Arthur G. Lewis, County Auditor.
Illinois.....	Chicago.....	September 2, noon....	Equipping 8-track bridge at Campbell Ave.....	I. J. Bryan, Clk. Sanitary Dist.
New Jersey.....	Atlantic City.....	September 2.....	Constructing bridge.....	E. D. Rightmire, Engineer.
Virginia.....	Speedwell.....	September 7.....	Constructing iron bridge and abutments.....	A. L. Porter, Rural Retreat, Va.
Oklahoma.....	Beaver.....	September 7.....	Constructing wood pile bridge over Beaver river.....	W. L. Beardsley, County Clerk.
Mississippi.....	Greenville.....	September 7.....	Constructing 2 bridges, one 80 ft. and one 50 ft.....	W. W. Miller, City Clerk.
Lighting and Electricity				
Wisconsin.....	Keweenaw.....	August 27, 8 P.M....	Constructing electric light plant.....	J. H. Breumer, Mayor.
Minnesota.....	Brainard.....	August 27.....	Bldg. dam and hydro-electric plant; oil electric plant.....	H. J. Spencer, City Clerk.
Illinois.....	Chicago.....	August 27.....	Furnishing material and constructing two electric light sub stations.....	John J. Hanberg, Com. Pub. W.
West Virginia.....	Wheeling.....	August 31, 11 A.M....	Bldg. power house at Dam No. 13, Ohio river.....	Capt. F. W. Alstaetter, U. S. Army.
Manitoba.....	Winnipeg.....	August 31, noon....	Supplying 50,000 carbons for series a. c. enclosed arc lamps, 1/2 cored and 1/2 solid.....	M. Peterson, Sec'y Bd. of Control.
New York.....	Buffalo.....	August 31.....	Furnishing and installing Westinghouse generator, 25 H.P. Skinner automatic engine, motor, etc.....	Francis G. Ward, Com'r Pub. Wks.
Iowa.....	Earlham.....	September 1.....	Constructing electric light plant.....	J. R. Thompson.
Wisconsin.....	Chilton.....	September 1.....	Constructing municipal electric light plant.....	Jos. Graswold, City Clerk.
Illinois.....	Galesburg.....	September 1.....	Wiring Knox County alms house for lighting by electricity; also piping and fixtures for gas.....	Frank L. Adams, Clerk.
Alabama.....	Russellville.....	September 1.....	Constructing water and light plant.....	W. H. Austin, Town Clerk.
Wisconsin.....	Kenosha.....	September 8, 8 P.M....	Electric street lighting for 5 and 10 years, from Aug. 20, 1909; 155 or more street arc lamps, 2,000 c.p.....	Geo. W. Harrington, City Clerk.
New York.....	White Plains.....	September 10.....	Furnishing engine, dynamos, etc.....	Chauncey I. Secor, Chm., Court House Commission.
Connecticut.....	Hartford.....	September 14, 11 A.M....	Lighting streets with electricity for 1 and 5 years.....	City Clerk.
Manitoba.....	Winnipeg.....	September 15.....	Electric lighting plant and carbons.....	F. A. Cambridge, City Electrician.
Washington.....	Tacoma.....	September 19.....	Water power, electric light and power plant.....	H. J. McGregor, Com'r Pub. Wks.
Wisconsin.....	Green Bay.....	September 23.....	Gas and electric fixtures, etc., new Co. Court House.....	Elmer S. Hall, Clk., Brown Co.
Illinois.....	Chicago.....	September 24.....	Furnishing and installing electric machinery and turbine water wheel.....	I. J. Bryan, Clk. Bd. of Trustees San. Dist.
Porto Rico.....	Ponce.....	October 15.....	Constructing electric light plant.....	Blass C. Silva, City Engineer.
Miscellaneous				
New York.....	Brooklyn.....	August 27, 3 P.M....	Underpinning masonry retaining wall.....	Henry Smith, Pres. Park Board.
Pennsylvania.....	Reading.....	August 28, 7 P.M....	Collection and disposal of garbage for 3 and 5 years.....	Elmer H. Beard, City Engineer.
New York.....	Buffalo.....	August 28.....	Constructing furnace at refuse disposal plant.....	F. G. Ward, Com'r Pub. Wks.
Ohio.....	Youngstown.....	August 29, noon....	Collection and removal of garbage for five years.....	Dr. H. E. Welch, Health Officer.
Indiana.....	Indianapolis.....	August 29.....	Fire concrete culverts.....	Board of Co. Commissioners.
Ohio.....	Sontol.....	August 31.....	Constructing earth fill over culvert.....	County Auditor.
Florida.....	Pensacola.....	September 3, 6:30 P.M....	Furnishing police and fire uniforms.....	L. G. Aymard.
South Carolina.....	Charleston.....	September 5.....	Furnishing creosoted lumber and rubblestone.....	Capt. E. M. Adams, Eng'r Corps.
New Jersey.....	Camden.....	September 8.....	Bldg. concrete retaining wall.....	Harry Humphreys, Pres. Park Com.
Ohio.....	Cincinnati.....	September 10, 2 P.M....	Constructing concrete dam at Brown's Island, Ohio River.....	Colonel Wm. T. Russell, U. S. A.

STREET IMPROVEMENTS

Aniston, Ala.—Council has recently adopted a resolution providing for the paving of Tenth street, between Noble street and the railroad; vitrified brick may be used.—Mayor Kilby.

Gurley, Ala.—The City Council has decided to pave the two principal business streets in the city with vitrified brick pavement.

Mesa, Ariz.—The Legislature will be asked to aid in the proposition to build a good road from here to Grand Canyon.

Pasadena, Cal.—A project is on foot looking to the paving of Orange Grove avenue in this city.

San Bernardino, Cal.—San Bernardino County will issue bonds for the purpose of improving about 79 miles of county highways.

San Francisco, Cal.—The Board of Public Works has decided to repave Minna street with basalt blocks at a cost of \$11,000.

Glenwood Springs, Col.—An automobile road 40 miles long, from this city to Marble, is being discussed.

Denver, Col.—The Board of Supervisors has authorized the construction of a boulevard between Thirty-eighth and Downing avenues to the Brighton road.

Pensacola, Fla.—Escambia County Commissioners adopted resolutions calling for special election on November 12 for \$200,000 road improvement bonds.

Tampa, Fla.—City will vote in October on issuance of \$600,000 of bonds for paving, etc.—Address the Mayor.

Davenport, Ia.—The City Council has under consideration the paving of East River and Third streets.

Beardstown, Ill.—Civil Engineer C. W. Brown, Jacksonville, Ill., is preparing plans for about ten blocks of vitrified brick paving on concrete foundations, for the city of Beardstown.

Dalton, Ill.—Engineer E. A. Rossiter, 84 Washington street, Chicago, is preparing plans for a system of brick and tile sewers, from 12 inches to 4 feet in diameter, for the Board of Local Improvements; \$75,000.—A. Schaefer, Village Clerk.

Jacksonville, Il.—Civil Engineer C. W. Brown is preparing plans for paving a number of streets with vitrified brick, on concrete foundations, to cost about \$20,000.—S. B. Stewart, City Clerk.

Robinson, Ill.—Commissioners of Highways will shortly let contract for construction of hard roads on number of highways.

Rockford, Ill.—The cost of paving Main

and State streets with asphalt is estimated by City Engineer Hand at \$73,623.

New Albany, Ind.—The Board of Public Works has been petitioned for the improvement of Oak street with a roadway of brick and cement sidewalks. Tenth street will also be improved with a 24-foot vitrified brick roadway.

City Engineer Mann has submitted to the Board of Public Works plans and specifications for paving Oak street, from Tenth to Eleventh street, with vitrified brick.

Terre Haute, Ind.—Auditor Wallace will advertise for bids at once for new and improved roads, between \$60,000 and \$70,000 to be expended. Some will be of gravel and some macadam.

Dubuque, Ia.—Council is considering plans for improving Grand View avenue by paving and parking.—Edward E. Linehan, City Clerk.

Mason City, Ia.—At a meeting held on Aug. 10 the City Council decided to pave Fourth street.—Alderman Miller.

Paris, Ky.—The Bourbon Fiscal Court has appropriated funds for the reconstruction work on the 300 miles of turnpike in the county.

New Orleans, La.—A petition is being circulated and will shortly be presented to Council asking for the paving of Carrollton avenue, from St. Charles avenue to the City Park.

Baltimore, Md.—Specifications were approved for the paving of North avenue, from Washington street to Gay street; Curney street, from Baltimore street to Fairmount avenue; Oakfield avenue, from Liberty road to Forest avenue, and Washington street, from Taylor street to Hartford road.—J. Barry Mahool, Mayor, President Board of Awards.

Frostburg, Md.—A special meeting of the Council was recently held to consider plans and specifications for the paving of Broadway.

Beverly, Mass.—The city has made an appropriation of \$30,000 for the paving of Cabot street, from Fayette to Federal street. Street Committee is now considering the kind of material to be used.

Chicopee, Mass.—Mayor Beauchamp is in favor of bonding the city for the purpose of securing funds for good roads.

Lynn, Mass.—The City Council has appointed a commission to prepare a plan for rebuilding and modernizing streets of Lynn. The committee must report by Jan. 1, 1909.

—Henry W. Eastham, Chairman Commission.

Cadillac, Mich.—At a recent meeting of the Common Council a resolution was passed providing for the macadamizing of Wood street, from the north line of Howard street to the south line of Granite street.

Detroit, Mich.—Highland Park residents will vote on the proposition to bond for \$40,000 for repaving the Woodward avenue pavement.

Saginaw, Mich.—Council has decided to pave Seventh street with asphalt.

Duluth, Minn.—Common Council has passed a resolution that a sanitary sewer be constructed in the right-of-way between Jefferson street and Superior street, from Sixteenth avenue east to Fifteenth avenue east, with outlet in Fifteenth avenue east to the sewer in Jefferson street.

Vicksburg, Miss.—City is considering paving of one block along canal front.

Kansas City, Mo.—The County Court has ordered the Surveyor to receive bids for the opening and grading of the Blue Ridge road, from the Coal Mine road to the Raytown Creek road.

Springfield, Mo.—Harry G. Horton, City Engineer, has estimated the cost of paving North Jefferson street at \$12,269.

Elizabeth, N. J.—A petition is being circulated which will shortly be presented to Council asking for the paving of Erie street.

Newark, N. J.—At a recent meeting of the Common Council an ordinance was passed for the repaving of Hill street, from Broad street to Washington street with granitoid concrete.

Somerville, N. J.—The Board has passed an ordinance providing for a permanent pavement on East Main street, from Grove to Looser avenue.

Bolivar, N. Y.—September 1 bids will be received for the purchase of \$5,500 5 per cent. street improvement bonds.—A. J. Mason, Village Clerk.

Jamestown, N. Y.—The matter of paving Lake View avenue is again being considered by Council.

Newburgh, N. Y.—It has been decided to pave North Water street with brick.

Niagara Falls, N. Y.—The Board of Aldermen has been considering the matter of paving East Linwood avenue, between Eleventh and Eighteenth streets.

Northville, N. Y.—E. Partridge will superintend the work of repaving the roads in Fulton County for which the State Department of Good Roads has made an appropriation.

Portchester, N. Y.—At a recent meeting of the Board of Trustees, on motion of Mr.

Hamil, it was decided to macadamize Terrace avenue and to install brick gutters.

Winston-Salem, N. C.—City contemplates paving West Fourth street with bitulithic.—O. B. Eaton, Mayor.

Bellefontaine, O.—September 1 bids will be received for the purchase of \$6,000 5 per cent. street improvement bonds.—Luther B. Stough, Clerk.

Bellaire, O.—At an adjourned meeting of the Belmont County Commissioners, it was decided to proceed with the proposed improvement by grading and paving of the Bellaire and Wegee pikes.

Brookville, O.—Council will macadamize Wolfe Creek pike. Mayor Summers will have the ordinance drafted at once.

Cincinnati, O.—The cost of improving Summit avenue, from Edgemont street to Reading pike has been estimated at \$7,120.

Columbus, O.—Bids will be received by the State Highway Commission through the County Commissioners of Mahoning County for grading and macadamizing 2.3 miles of road in Boardman and Poland township. Estimated cost of constructing, \$19,761.10; certified check for \$300 required.

Delhi, O.—At a recent meeting of the Council an ordinance was passed providing for the paving of Independence avenue with vitrified brick.

East Liverpool, O.—City Engineer J. C. Kelly, City Hall, has prepared plans for 22,000 square yards of brick pavement and 10,000 linear feet sandstone curb and cinder on crushed stone base, on Pennsylvania avenue, for the Board of Public Service.

Hamilton, O.—Common Council has plans under way for the paving of South Front street, from Sycamore to Hanover; Mason street, from Millville to Webster avenue; Market street, from Monument avenue to Fourth street, and Millville avenue, from Main street to the C., H. & I.

Lisbon, O.—A proposition to issue municipal bonds for the sum of \$2,000 for street improvements, carried at a special election in Hanoverton. Of the 94 votes cast 70 were in favor of the proposition, constituting more than the required two-thirds. The improvement is to be made in connection with the paving by the county, with State aid, of the road from borough limit of Hanoverton to the Cleveland & Pittsburgh road in Kensington. The thoroughfare will be paved within the village limit from the corporation line to the canal bridge, making a brick roadway 14 feet wide and in all a mile and a half wide.

Toledo, O.—Council Finance Committee has recommended issuing \$45,000 4½ per cent. 10-year bonds for the purpose of continuing work on the boulevard.

Boulevard bonds to the amount of \$45,000 will be sold at once.

A boulevard connecting the cities of Cleveland, Toledo and Detroit is being agitated by the members of the Toledo Automobile Club and others, in connection with the agitation for good roads.

Toledo, O.—County Surveyor Hofman, it is stated, estimates the cost of road repair necessary in the county at \$264,744. The County Commissioners on Sept. 4 will sell \$60,000 bonds to start this work.

Wellsville, O.—The City Council has asked that the Board of Public Service proceed with the repaving of Eighteenth street, from Common street to Clark avenue.

Youngstown, O.—The Apartment House Company has purchased from George Todd eight acres of the old fair grounds and will extend Fair Green avenue through from Fifth to Belmont and from Ford to the intersection of Fair Green in 60-foot streets. The streets will be paved and have cement sidewalks, curb and gutter, water, gas and sewer, with all connections made to the curb.

Guthrie, Okla.—Either brick or asphalt will be used to pave Noble street in this city.—Mayor Barnes.

Hobart, Okla.—Council will pave several streets.—A. F. Hooper, Mayor.

Vinita, Okla.—City will grade, curb, gutter and pave with macadam or bitulithic about three miles of street.—G. P. Fogle, City Clerk; S. F. Parks, Mayor.

Roseburg, Ore.—Council has passed an ordinance providing for the paving of 13 blocks in this city, and bonds for the work are now advertised; it is expected that work will be started in the near future.

An ordinance has been passed providing for paving 13 blocks of streets.

East Washington, Pa.—Council will receive bids September 4 for \$11,000 street improvement bonds.

Pittsburg, Pa.—The paving of Forbes street, from the intersection with Beechwood boulevard to the Wilkinsburg line, is being agitated by residents of that section.

Point Marion, Pa.—Morgantown and Railroad streets, from Penn to Broadway, are to be paved.—Address Council.

West Finley, Pa.—A new road is to be constructed in this township near the State line.

Nashville, Tenn.—It was decided at the

election held to issue \$50,000 of bonds for the purpose of creating a sidewalk and curbing fund.—Jas. S. Brown, Mayor.

The Board of Public Works will shortly let contracts for grading and macadamizing Coffee street, from Eighth avenue to Hamburg street; Cockrill street, from Sixteenth to Eighteenth avenue; Nassau street, from Coffee to Buchanan street.

Houston, Tex.—The City Council has adopted an ordinance providing for issuance of bonds in the amount of \$100,000 for street improvement, including the resurfacing of Congress and McGowan streets, at present paved with asphalt.

Cleburne, Tex.—The question of issuing \$25,000 in bonds for street improvements is being considered.

San Antonio, Tex.—Plans are under way for the macadamizing of streets in the Dreiss Hill section.

Salt Lake City, Utah.—A petition is being circulated asking for the paving of Third South street, in this city.

Chase City, Va.—Taxpayers have voted in favor of issuing bonds in the amount of \$60,000 for the purpose of macadamizing roads.

Norfolk, Va.—City Council has appropriated funds for the paving of Henry street, in the Fourth Ward, and for curbing and guttering Jamison and Ferguson avenues, in Brambleton Ward.

Richmond, Va.—A number of citizens of Henrico have proposed a highway to extend from Hanover County direct to this city, entering the city through Highland Park.

Roanoke, Va.—City will construct 6-foot granolithic sidewalk on Shenandoah and Holliday avenues and full-width granolithic walk with granite curbing on Gilmer avenue.—W. B. Bates, City Engineer; W. E. Thomas, Clerk of Council.

Fulton, W. Va.—Council is discussing improvement of a portion of the National road in the west end of town.

Philippi, W. Va.—The city has decided to pave several streets with brick, \$16,000 bonds having been voted for the purpose.—Address City Clerk.

Puyallup, Wash.—The City Council has passed a resolution providing for the paving of Meridian, Stewart and J streets, to cost \$49,952.

Tacoma, Wash.—Council has passed resolutions as follows: Instructing the Commissioner to make plans and estimates for improvement of East P street, from Bay street to South Twenty-eighth street; for the improvement of Puyallup avenue and Bay street, from present brick pavement to East T street; for improvement of Puyallup avenue, from Bay street to T street, and T street, from Puyallup avenue to Bay street, by grading and graveling; to make plans and estimates for paving a continuous road or roads to Point Defiance over Junett and other streets.

The City Council Street and Alley Committee has decided to grade and pave portions of I and J streets.

SEWERAGE

Forney, Ala.—The city will shortly have plans prepared for the construction of a proposed sewer system, for which bonds have been voted.—Address the Mayor.

Selma, Ala.—Mayor Atkins of this city urges the installation of a garbage crematory.

Arkansas City, Ark.—The city contemplates the construction of a sewer system.—Address Mayor.

Hope, Ark.—City contemplates construction of sewerage system; about \$250,000 to be expended.—Address the Mayor.

Bakersfield, Cal.—City Engineers are at work on plans for additional lateral and district sewers.

Denver, Col.—Bids are about to be called for by the Board of Public Works for the construction of a sanitary sewer for the south side of the city, to cost about \$1,000,000. The main line will extend through the south side and empty into the Platte below Globeville.

Hartford, Conn.—Council has been petitioned for the construction of a public sewer on Windsor street, from Canton street northerly to the present sewer.

Torrington, Conn.—The town has purchased 15 acres of land for a sewer bed.

Willimantic, Conn.—Residents of Godfrey street have petitioned the city for the construction of a sewer through that thoroughfare. The matter will be taken up at next meeting of the Aldermen.

Detroit, Mich.—The Water Board will discuss a request from the Common Council that the Commission allow the use of a part of the water works park for a site for the pumping station to dispose of the sewage of Fairview.

St. Augustine, Fla.—The citizens of North City have petitioned the City Council to construct a sewerage system in that section of the city.

A movement has been started to secure the construction of a good sewerage system.

Tampa, Fla.—City will vote in October on \$600,000 bond issue for sewer construction, etc.

Atlanta, Ga.—City has been authorized to issue \$1,500,000 of bonds recently mentioned, of which \$500,000 will be expended for improvement of sewer system.—W. J. Campbell, City Clerk.

Wallace, Ida.—It is proposed to expend about \$10,000 for new sewers.

Alton, Ill.—The City Council has authorized the construction of the East End trunk sewer.

Bloomington, Ill.—At recent meeting of the City Council City Engineer submitted an estimate of the cost of the proposed Livingston street sewer, from Forrest to Aqueduct street.

Board Public Improvements has decided to construct sewer in Mill street.

Carrollton, Ill.—City Council will shortly take up matter of constructing sewer system.

Joliet, Ill.—Woodruff Safety Deposit Company has secured permit to excavate for and construct a sewer in Van Buren street east from Chicago street.

The Board of Local Improvements has plans under way for the proposed sewer to be built in Raynor avenue, from Washington street south to Marion street.

Peoria, Ill.—Work on the specifications of the west section of the East Bluff sewer is progressing rapidly.

Boonville, Ind.—The matter of whether the new city sewers shall be constructed of brick or concrete has not yet been decided.

Evansville, Ind.—The Board of Public Works contemplates the construction of a sewer in Louisiana street, from Read to Mary street.

Logansport, Ind.—Members of the Executive Board of the Orphans' Home recently appeared before the County Commissioners and asked that a sewer be built to the home.

Vincennes, Ind.—Board Public Works has requested City Council to appropriate \$1,750 for the purpose of securing an engineer to prepare plans and estimates for a complete system of storm and sanitary sewers for the city.—George E. Greene, Mayor.

Grundy Center, Ia.—Plans will be prepared at once for the construction of a sewerage system.

Sioux City, Ia.—G. Y. Skeels, City Engineer, has prepared plans for the Bacon Creek sewer providing for brick and concrete construction. The conduit is to be 2,500 feet long, and if constructed of brick is to be 4-ring. Estimated cost, \$54,445.

Bath, Me.—This town will expend \$26,000 for sewers this Fall. They will be from 20 to 42 inches in diameter and of concrete.

Portland, Me.—The City Council has authorized the Commissioner of Public Works to construct a sewer in Congress place from a distance of 295 feet southerly from Deering street.

For the third time the Committee on Public Works will advertise for proposals for the construction of the Morrill's Corner sewer. Bids received Aug. 14 were rejected.

Baltimore, Md.—C. M. Hendrick, Chief Engineer of the Sewerage Commission, is preparing plans and specifications for sewer work, to be let this Fall, which will cost \$1,250,000.

Attleboro, Mass.—The matter of building a sewerage system in North Attleboro is now being agitated. Application for the construction of same has been made to the State.

Beverly, Mass.—It is probable that the Finance Committee will shortly hold a meeting for the purpose of taking action on the order submitted by the City Council for an appropriation of \$50,000 to build sewers in sections of Wards 2 and 4.

Gardner, Mass.—Plans are under way for the extension of the sewer system to include Dublin, Pleasant and Emerald streets.

Springfield, Mass.—Bonds will shortly be issued in the amount of \$50,000 for the new trunk sewers to be built in State, Union and Ferry streets.

Winchendon, Mass.—Complaints are being received about the bad drainage in the town. Some time ago plans were prepared for a sewer system and same are now in the hands of the Selectmen. It is expected that the matter will be taken up at the town meeting to be held soon.

Worcester, Mass.—Mayor James Logan has decided to have 60 feet of sewer put into Main street, near Apricot street before that thoroughfare is paved.

East Lansing, Mich.—It is proposed to expend about \$5,300 for sewers and drains.—Geo. Martin, City Clerk.

Clare, Mich.—Sewers are to be constructed in Seventh and State streets.

Alexandria, Minn.—September 1 bids will be received for the purchase of \$44,000 4½ per cent. 10-year Douglas County drainage bonds.—E. P. Wright, County Auditor.

Crookston, Minn.—The City Engineer has estimated the cost of constructing sewers in portions of Alexander street and Summit and River avenues at \$4,605.

New Ulm, Minn.—City Council has ordered construction of sewer in Centre street.

Northfield, Minn.—Estimates have been made for constructing sewers in Water and Spring streets.

St. Paul, Minn.—The Board of Public Works has passed favorably upon sewers on Lincoln avenue, York street and on Cook street.

Plans for the proposed sewer for Colorado street, from Hall to Stryker avenues, have been prepared by City Engineer, also for sewer on Rose street, from Greenbrier to Payne avenues.

Springfield, Minn.—Sewers are to be constructed in Main street, Marshall avenue, and Cass street.—A. Frederickson, Village Recorder.

Prentiss, Miss.—Bids have been advertised by Board of Supervisors for construction of a sewerage system for the county jail and courthouse.

Joplin, Mo.—Council has passed an ordinance providing for the construction of sewers in East Joplin districts Nos. 8 and 8. Petition was granted for construction of private sewer at E and Wall streets.

St. Joseph, Mo.—City has voted to issue \$400,000 of bonds for the following work: Sewers, \$250,000; new central fire station and other improvements in the Fire Department, \$75,000; finishing the Patee market house, \$25,000; police and fire alarm signal system, \$15,000; extending the White Way, \$15,000; repairs and improvements at the City Hall, \$10,000; repairs and improvements at Central Police Station, \$10,000. The sewer work includes the extension of sewer main sewers.

Norfolk, Neb.—At recent meeting of the City Council a new sewer district was formed, to be known as District No. 9, taking in the territory of First and Third streets and Madison and Michigan avenues.

Binghamton, N. Y.—State Health Officer is moving for the construction of a sewerage disposal plant for this city.

Elmira, N. Y.—State Health Department is urging the establishment of a sewerage disposal plant.

Fayetteville, N. Y.—Engineer Smalley has submitted plans for the proposed sewer system to be installed. The total length of the system will be about 6½ miles and the cost, including filtering plant, will be about \$20,000.

Gloversville, N. Y.—A resolution has been adopted for the construction of a 12-inch sewer over the Kassom property, from South Main to South School streets.

Johnstown, N. Y.—All bids were rejected for approximately 11,164 square yards brick pavement, 4,826 linear feet new stone curbing, 567,100 feet new stone headers, 152 linear feet 8-foot radius.

Katonah, N. Y.—Plans will be prepared at an early date for the construction of a sewerage system. The city of New York will pay the cost of constructing a disposal plant.

Le Roy, N. Y.—Village will probably soon have to take up matter of installing a sewer system.

Mechanicville, N. Y.—The Sewer Commissioners have approved of plans for sewer mains on Greene street and Fifth avenue.

Oswego, N. Y.—City Engineer Charles H. Snyder, City Hall, has completed plans for a tile sewer system for the section of the city bounded on the south by Burkle street, on the west by Duer, Eighth, Ninth and Tenth streets, and on the east by Thirteenth street; to be 24 inches and smaller; estimated cost, \$72,817.51. Bids will soon be called for by the Board of Public Works.

Seneca Falls, N. Y.—The following is the estimate of quantities of work for the sewerage disposal plant now advertised for tenders: 400 cubic yards earth excavation, 1,200 cubic yards burrow excavation, 210 cubic yards 1-2-4 concrete, 440 cubic yards 1-3-6 concrete, 60 cubic yards broken stone, 11,000 pounds square twisted rods, 9,000 square feet wire fabric, 100 linear feet 24-inch vitrified pipe, 50 linear feet 24-inch reinforced concrete pipe, 132 linear feet 24-inch reinforced concrete or cast-iron pipe, 1 brick manhole.

Waterloo, N. Y.—The Village Board has decided to issue \$90,000 to pay for the sewer now in process of construction.

Dayton, O.—September 14 bids will be received for the purchase of \$50,000 sewer bonds, interest 5 per cent. The bonds will be payable in the years 1909 to 1919 inclusive.—Edward Phillips, City Auditor.

City Engineer Cellarius has filed plans for new storm sewer in Bolender avenue; estimated cost is \$32,870.

Delaware, O.—The City Council has now under consideration the construction of a sewerage disposal plant.—Geo. S. Irwin, City Engineer.

Elmwood, O.—This village has voted \$50,000 of bonds for sewers.

Lorain, O.—Clerk of Service Board has

been instructed to advertise for bids for construction of Oberlin avenue sewer.

Clerk of the Service Board A. T. Thomas was instructed to advertise for bids for the construction of the Oberlin avenue storm water sewer; cost, \$20,000.

Lowellville, O.—Plans have been completed for a sewer system for this place.—Geo. P. Schrader, Village Clerk.

Urbana, O.—The Council has voted in favor of having the Solicitor prepare a resolution providing for the issue of \$30,000 bonds, with which to start constructing a sewerage system.

Warren, O.—J. E. Beebe, Chairman of the Sewer Committee, has secured permission from the State Board of Health for a sewer in District No. 3.

McAlester, Okla.—City has, it is reported, provided for election for voting on issuance of \$120,000 of bonds for extension of sewer system.—G. M. Chany, Mayor.

Pryor Creek, Okla.—City contemplates construction of sewer system.

Bellefonte, Pa.—State Health Department has directed that this place provide sewage disposal plant within one year.

Hazleton, Pa.—The State Department of Health has ordered steps to be taken at once for the installation of a sewerage system in White Haven, the location of a number of tuberculosis treatment establishments. The place is without proper sewerage facilities.

Middletown, Pa.—State Health Department Engineers will supervise plans for the sewerage disposal plant and lines at this place.

Minersville, Pa.—New sewer is to be constructed here.

New Wilmington, Pa.—State Health Department has granted this borough permission to construct a 4-mile sewer system.—J. C. Martin, Borough President.

Pittsburg, Pa.—Ordinance will come before Councils this Fall, providing for the construction of a sanitary sewer to parallel a branch of Saw Mill Run. The proposed sewer will be about 1½ miles long and will cost about \$50,000.

White Haven, Pa.—State Health Department has required this place to submit plans for sewerage disposal.

Chattanooga, Tenn.—A meeting of the Upper Board of City Council was recently held for the purpose of passing on the cross-town sewer resolution.

Houston, Tex.—City will vote on issuance of \$750,000 of bonds to construct storm and sanitary sewers, drainage, etc.

Sulphur, Tex.—The city is contemplating extending its sewer system by laying 6,000 feet of 8-inch piping and 5,000 feet of 6-inch piping.—E. L. Dalton, Juanito Building, Dallas, Tex., Consulting Engineer.

Salt Lake City, Utah.—August 31 bids will be received for the purchase of \$200,000 water bonds and \$125,000 sewer bonds.

At recent meeting of the City Council City Engineer Kelsey recommended that a sewer extension be created in order to lay a lateral sewer in the center of West Temple street.

Basic City, Va.—Bonds are to be issued, a portion of which will be used for paving and sewers.—Mayor Chas. A. Van Lear.

Spokane, Wash.—City Engineer Ralston estimates the cost of constructing sewers in the Third District of the First Ward at \$57,023.

West Allis, Wis.—A license has been granted to the city by the Chicago, Milwaukee & St. Paul Railway Company to construct a sewer along its right of way from Sixty-ninth street to Honey Creek, as an outlet to the septic tank which is to become a part of the sewerage system.

Racine, Wis.—The Board of Public Works will prepare plans, specifications and estimated cost for a sewer in Racine street.—P. H. Connolly, City Engineer.

Washington, D. C.—Specifications are being prepared for the construction of several sewers in Arkansas avenue and in New Hampshire avenue northwest.

WATER SUPPLY

Albertville, Ala.—J. R. Thomas, President of the Commercial Club, states that as yet no engineer has been selected for the proposed water works and electric light plant.

Columbus Junction, Ala.—The town authorities are contemplating putting in air-compressing water tanks.

Florida, Ala.—It is reported that estimates are now being made for construction of a water works system.

Mesa City, Ariz.—The city has voted \$50,000 of bonds for the installation of water works.—L. G. Knipe, Phoenix, Ariz., Engineer.

Forest City, Ark.—The city has voted to issue \$30,000 of bonds to consolidate and improve the municipal water and light plants.

Midway, Cal.—Midway oil men are formulating plans for a new water system to relieve the present scarcity of water.

San Bernardino, Cal.—The Water Com-

mission is now considering extension of water system.

San Diego, Cal.—The city is offering bonds for sale for the purpose of providing funds for the enlargement of the water system.

Sacramento, Cal.—Mayor White has recommended that a new pump be installed at the water works.

Sausalito, Cal.—Special election will be held Aug. 31 to vote on proposition to bond for \$100,000 to construct a fresh water distributing plant.

Boulder, Col.—C. W. McCarthy, of Holdrege, Neb., and associates, have filed plans for a storage reservoir to be constructed for use of Boulder County, Col. The Eastern Colorado Power Company has filed plans for the Twin Lakes reservoir, to be built 4 miles from Boulder.

Delta, Col.—Plans of the Jumbo reservoir and irrigating ditch, in Delta County, have been filed with the State Engineer for approval. The proposed reservoir is to cover an area of 160 acres and the ditch will irrigate about 4,000 acres; estimated cost is \$40,000.

De Funiak Springs, Fla.—The construction of a water works system will shortly begin.

Tampa, Fla.—City will vote in October on issuance of \$600,000 of bonds for purchase or construction of water works, erection of City Hall, widening of Lafayette street bridge, additional paving, sewer construction, etc.

Covington, Ga.—City has had plans prepared by J. B. McCrary & Co., Atlanta, Ga., for proposed water works of 200,000 gallons' capacity daily; size and character of buildings not determined; McCrary & Co. will probably install plant; amount available for water works and sewerage, \$60,000.—S. P. Thompson, Mayor.

An election will be held Sept. 19 to decide the question of issuing \$19,000 water works bonds. This second election will be held to establish the legality of the bonds.

Ocala, Ga.—The citizens have voted in favor of issuing \$70,000 of bonds for the construction of water works.

September 10 bids will be received for the purchase of \$15,000 5 per cent. water works bonds.—M. J. Paulk, Mayor.

Jerome, Ida.—Plans are under way for the installation of an up-to-date water works system, work to be started this year.

Wendell, Ida.—A modern water works system will be constructed this year.

Dixon, Ill.—The Council will extend water mains in several streets.

Moline, Ill.—City Council has received petitions asking for the construction of water mains in the territory east of Thirteenth street and that a water main be laid in Factory avenue, from Ninth to Thirteenth street.

Goshen, Ind.—The matter of increasing the water supply for the city will probably be taken up in the near future.

Baltimore, Md.—Daniel W. Banks, Consulting Engineer, Maryland Savings Bank Building, has been selected to prepare plans and specifications for the construction of a pipe line system in the business district. The plans will provide for a pumping station costing about \$250,000, equipped with two distinct motive powers, and of sufficient capacity to give a pressure of 300 pounds per square inch at nozzles. A complete system of pipes and hydrants will be installed, to cost about \$250,000. The work will be under the supervision of the Board of Fire Commissioners.—Edward M. Parrish, President.

Frederick, Md.—The city is considering laying a 15-inch water pipe line parallel to the present 8-inch main; estimated cost, about \$10,000.

Medway, Mass.—The question of installing a water system in this town will come up before the voters at a special town meeting shortly to be held.

Randolph, Mass.—The town has instructed the Water Commissioners to extend the water mains from the present terminus on Allen street to the residence of Wm. Pelisier.

Big Rapids, Mich.—An election will be held for the purpose of voting on the proposition to issue bonds for enlarging and extending water mains.

Lansing, Mich.—The City Council may purchase an air lift pump for the water system.

Gothenburg, Neb.—The citizens have voted to issue \$25,000 in bonds for construction of water system and \$7,000 in bonds for sewer system.

Babylon, L. I., N. Y.—The State Water Supply Commission will hold a public hearing on the Suffolk County water question at the Watson House Sept. 10; an additional water supply is desired.

Canajoharie, N. Y.—A special election will be held to vote on a proposition to expend \$75,000 for a new water system, to include pumping station, piping, etc. Preliminary plans and estimates have been prepared by Consulting County Engineer Morrell Vrooman, Gloversville, N. Y.

Shortsville, N. Y.—It was decided to issue \$30,000 of bonds for the construction of a water works system and pumping station. N. Brown, Rochester, N. Y., has been engaged as engineer.—Chas. H. Davison, Village Clerk.

Marion, N. C.—City will vote Sept. 8 on issuance of \$20,000 of bonds to increase water supply, which is at present secured from deep well. It is proposed to install gravity supply system and lay six and one-third miles of 6-inch piping, daily capacity to be 550,000 gallons. J. B. Rider, Broadway, New York, is preparing plans and making survey.—W. F. Wood, Mayor.

Raleigh, N. C.—The Wake Water Company will extend its mains from West Raleigh and the Agricultural and Mechanical College to the fair grounds.

Hamilton, O.—A proposition to extend the water service to the newly annexed territory carried Aug. 15 by a vote of 10 to 1. A proposition to establish a park system also carried.

Newton Falls, O.—The State Board of Health has denied the request of the Board of Public Affairs of this town to take water for the water works system from the west branch of the Mahoning River unless it erects a purification plant.

Shawnee, O.—The Council has directed specifications to be prepared for \$25,000 water system.

Clinton, Okla.—The city has voted \$20,000 of bonds for the extension of the water works system.—J. L. O'Hearn, City Engineer.

Hastings, Okla.—City will vote on issuance of \$27,000 water works bonds.—Address the Mayor.

Hugo, Okla.—City will probably soon invite bids for construction of water works, for which \$150,000 of bonds were previously reported voted; plant will consist of pumping station, about 15 miles of mains, 60 fire plugs and 2,000,000-gallon reservoir.—Hiram Phillips, St. Louis, Mo., Consulting Engineer.

Grants Pass, Ore.—Business men and taxpayers of this place are urging the City Council to either buy the Rogue River Water Company's plant or to install a new plant, to be owned by the city. It is very probable that the proposition will be submitted to the voters.

Anderson, S. C.—Anderson Water, Light and Power Company will drill 70 additional wells to supply 500,000 gallons of water daily, thus doubling present capacity.

Spartanburg, S. C.—City has \$40,000 available for water works improvements out of recent bond issue of \$230,000 to purchase and enlarge plant of Home Water Supply Company; will buy electric pump with capacity of 2,000,000 gallons daily and boiler to operate pump; will also lay several miles of piping. W. B. W. Howe, Engineer.

Plankinton, S. D.—The City Council has taken steps to secure a better water supply and to insure better fire protection.

Yankton, S. D.—The city is once more discussing the erection of a new water system, estimated to cost \$100,000.

Lexington, Ken.—A movement has been started in this town which will terminate in the construction of a modern and up-to-date water works system.

Sparta, Tenn.—Sparta Water Company incorporated with \$3,000 capital stock by R. F. Baker, S. J. Jackson, D. M. Meredith and others.

Austin, Tex.—City will expend about \$15,000 in erection of reinforced concrete pumping station, 89x35 feet. Walter G. Kirkpatrick, Jackson, Miss., Engineer; F. M. Maddox, Mayor.

Brunner, Tex.—The Brunner Water and Light Company will lay two miles of water mains, construct tower and reservoir and drill three artesian wells.

Galveston, Tex.—The city is carrying on the improvements of its water system, and the next year will probably see the main across the bay doubled and placed on the causeway instead of being buried beneath the water.

Houston, Tex.—City will vote on issuance of \$750,000 of bonds for extension of water works, construction of storm and sanitary sewers, drainage, etc., to supplement \$100,000 bond issue, recently mentioned, for street improvements.

Quannah, Tex.—A petition is being circulated which will shortly be presented to Council asking for the construction of a water works system.

Sherman, Tex.—City is considering election for voting on \$15,000 bond issue for improvement of water works.

Basic City, Va.—Bonds will be issued for the construction of a water works system.—Mayor Van Lear.

Bellingham, Wash.—The Water Board has been petitioned for the extension of water mains on Pacific and Toledo streets.

Seattle, Wash.—R. H. Thomson, City Engineer, has reported the estimated cost of the following improvements: Fourth avenue, South and other streets, water mains, \$42,100; Eighth avenue, South and other streets, water mains, \$64,800; Seventeenth avenue,

South and other streets, water mains, \$24,800; Seventh avenue, North, \$5,600.

Tacoma, Wash.—Plans will shortly be made for laying water mains in Puyallup avenue and other streets in the Indian addition.

The Commissioner of Public Works has been instructed to make diagrams and estimates of cost of laying water mains on Puyallup avenue and Bay street from K street and Puyallup avenue to East Twenty-fifth street, and a 12-inch cast-iron water main on South Twenty-fifth and Bay streets, from East D to East T street and on East L street, from Twenty-fifth street to Puyallup avenue; to prepare plans and specifications for supplying a pipe line from the J street standpipe to Section 36; to secure a well drilling outfit by hiring same for deepening South Tacoma wells or boring new wells; to prepare plans and specifications for increased reservoir capacity at Station B; to make plans and specifications for increasing capacity of Alaska street reservoir.

Winlock, Wash.—The village has decided to establish a water system; estimated cost, \$15,000.

Waukesha, Wis.—The City Council passed a resolution for extension of water main on East Main street, from Raymond to Adams street.—Mayor Glenn.

LIGHTING AND ELECTRICITY

Elba, Ala.—The town of Elba offers for sale \$15,000 electric light bonds.—W. J. Bowden, Mayor.

Pea River Power Company, previously reported, is said to be preparing to build its proposed 3,000-h.p. water power electric plant.—H. D. Boyd, Treasurer.

Gurley, Ala.—City has granted franchise to Fred A. Howe, Huntsville, Ala., to establish electric light and power plant at Gurley.

Russellville, Ala.—Contracts for the construction of the municipal electric light plant and water works system will be awarded about Sept. 1.—Edgar B. Kay, of Tuscaloosa, Ala., Engineer.

Tuscaloosa, Ala.—City Electric Company incorporated with \$5,000 capital stock by Arthur Laycock, J. F. Alston, W. T. Ozeant and Eugene Beatty.

Atkins, Ark.—The matter of establishing a municipal lighting plant is being considered.

Placerville, Cal.—City Attorney William F. Bray is interested in the establishment of a municipal electric lighting plant.

Boulder, Col.—The Colorado Eastern Power Company intends to construct a reservoir four miles northeast of this city. The new reservoir is the third to be built by the company and will be known as the Twin Lakes reservoir. It will lie in Sections 3, 4, 9 and 10, Township 1 N., Range 70 W., and will cover an area 1½ miles long and 1½ miles wide. The reservoir will have a capacity of 578,470,000 cubic feet of water. It will be formed by building a dam nearly a mile long and about 55 feet high across two of the small creeks running through the Boulder oil field. Into the basin thus formed the water of Left Hand Creek will be turned, and a large amount of the water from Boulder Creek will be taken to the reservoir through the Boulder and White Rock ditches. The plans of the company include the enlargement of these ditches and digging an outlet ditch from the reservoir to the river. By means of this reservoir and outlet the company will store the surplus water during the flood seasons, and during the dry weather will turn it back into the creek for the use of ditch companies lower down. The estimated cost of the work is \$200,000, and the construction of the dams is to begin at once.—J. W. E. Taylor, Superintendent.

Colorado Springs, Col.—It is stated that the stockholders of the Empire Water and Power Company have authorized plans outlined for company improvements by the directors. These include the issue of a mortgage for \$1,000,000 on property, half of which will be taken up soon. The company intends to establish power plants at Manitou, Cascade and Green Mountain Falls, and to generate power from its water on the north slope of Pikes Peak.—G. A. Taff, President.

The city is taking steps toward a municipal lighting plant.

Cornelia, Ga.—Linler & Well are in the market for alternating current, two-phase, 60-cycle motors, second hand, in good operating condition, from 2 to 35 horsepower.

Macon, Ga.—The City Council is contemplating installation of electric lighting and water plants.—J. W. Wilcox, City Engineer.

Franklin Grove, Ill.—Franklin Grove is to have electric lights. The Amboy Electric Light Company will build the line from Lee Center to this city.—A. M. Searles, President.

Forreston, Ill.—George M. Crombie, owner of the local electric light plant, has decided to install a new 35-kw., 2,200-volt, 60-cycle generator with transformer to step up the

voltage to 6,600 to furnish electricity for lamps and motors in Adeline, Ill., five miles distant.

Indianapolis, Ind.—The Indiana Lighting Company has been formed with a capital of \$4,500,000 by Franklin L. Babcock, Anthony N. Brady and others, and is authorized to furnish light, heat and power to Fort Wayne, Bluffton, Montpelier, Anderson, Lafayette, West Lafayette, Logansport, Peru, Wabash, Decatur, Geneva, Crawfordsville, Lebanon, Thorntown and Frankfort, in Indiana, and to Lima, Wapakoneta, Celina, St. Mary's, Greenville, Fort Recovery, North Mercer and Coldwater, in Ohio, and to other villages and towns in proximity to the cities and towns named.

A gigantic public utilities corporation, to supply light, heat and power to a score or more of cities and towns in Northern Indiana and Ohio has been formed with a capital stock of \$4,500,000. Articles of incorporation were filed this forenoon at the office of Secretary of State. The directors, most of whom are well known in the gas and electrical world, are as follows: Franklin L. Babcock, Anthony N. Brady, Charles F. Dieterich, Frank S. Hastings, James P. Lee, Samuel T. Murdock, Henry C. Paul, Albert Tag and James N. Wallace.

All the directors are New York City men except Murdock, who lives at Lafayette, and Paul, who lives in Ft. Wayne. Officers have not been elected, but it is understood that Mr. Dieterich will be President and Mr. Murdock Secretary and General Manager.

The Indiana Lighting Company, as the big corporation will be known, is authorized to supply light, heat and power to Ft. Wayne, Bluffton, Montpelier, Anderson, Lafayette, West Lafayette, Logansport, Peru, Wabash, Decatur, Geneva, Berne, Crawfordsville, Lebanon, Thornton and Frankfort, in Indiana, and to Lima, Wapakoneta, Celina, St. Mary's, Greenville, Ft. Recovery, North Mercer and Coldwater, in Ohio, and to other villages and towns in proximity to the cities and towns named. Light, heat and power may be supplied by means of artificial and natural gas, electricity, steam and hot water, and to that end the company is authorized to manufacture, produce, procure, transport, distribute and sell its products, also to purchase, lease or otherwise acquire natural gas territory, gas wells, gas works, power plants, etc. The company was incorporated under the Roemer public utilities law, enacted by the last General Assembly, and by it is enabled to purchase and own all or part of the shares of the capital stock and bonds and other securities of any other artificial or natural gas or electrical company and to invest its funds therein. The articles of incorporation state that "the consent of all persons who are or may become shareholders in the company formed hereunder is given to such purchase and ownership."

Seneca, Kan.—It is proposed to install new engine, dynamo and switchboard at the municipal plant.—G. D. Myers, Manager.

Mayfield, Ky.—The Mayfield Water and Light Company will erect a power plant, 88 x 100 feet, reinforced concrete, fireproof, to cost \$10,000. The contract for concrete work and house has been awarded to the Weldenfeller Construction Company, Chicago, Ill.

Ashland, Me.—C. A. Flint, owner of the electric lighting plant in Ashland, contemplates changing from steam to water power and erecting seven transmission lines.

Rangeley, Me.—The Rangeley Light and Power Company is considering the question of doubling the output of its plant during 1909. The improvements will require an expenditure of about \$50,000.—D. D. Elliott, President.

Boonsboro, Md.—The Antietam Electric Light and Power Company has engaged Orville Shiffer, Architect, of Hagerstown, Md., to prepare plans for its power plant, to be located on Antietam Creek. The company was awarded a contract recently to furnish the city with electricity for lamps for a term of ten years.—H. L. Moser, Secretary.

Maryville, Md.—The Rockford Electric Light Company will begin the construction of a concrete dam at its power plant on Little River at once. It will replace the present wooden structure.—James L. Clark, Manager.

Fitchburg, Mass.—The Board of Mayor and Aldermen has granted the petition of the Connecticut River Power Company for permission to erect its high-tension 66,000-volt wires across the highways in Fitchburg, and also to erect transmission lines of 6,600 volts from its transformer station on Beech street for the distribution of electricity to the different mills which have contracted with the company for electrical energy to operate their plants.

Chelsea, Mich.—Council has granted John B. Cole a franchise to erect and operate a gas plant in this village for a period of twelve years for fuel purposes.

Detroit, Mich.—The Detroit Edison Company is going ahead with its original plans for the enlargement and improvement of its

local plant. Seven million dollars' worth of bonds have been floated by the North American Company, and \$2,000,000 of this sum will be spent in duplicating the big lighting plant in Detroit. The foundations of the plant were laid last fall, and the contracts would have been let before this had it not been that the company believed the price of structural steel would sink much lower. The saving made in this way, it is estimated, will more than pay the interest on the bonds. Believing that the bottom of the market has been reached, the company is ready to go ahead, and it is thought work will be started next month. For some time it has taxed the capacity of the company to furnish all the light and power demanded, and the growth of the city has made enlargement a necessity. This, it is said, is only one of the coming developments. Extensive plans are under way for the utilization of the Huron River, between Ann Arbor and Ypsilanti, and it is thought a part of the \$7,000,000 will be used for this purpose. The company has also reached out towards Mt. Clemens, and it is only a question of time before it establishes a chain of plants encircling this city. In the building of the new plant 400 unskilled laborers will be employed and as many more skilled mechanics. The company's new arrangement with the city took effect July 1; the rate for electricity being reduced from 16 to 14 cents per unit. This rate is not to be disturbed for three years by the Council.

Sparta, Mich.—The citizens on Aug. 8 voted in favor of issuing \$20,000 bonds to construct an electric light plant.

Osakis, Minn.—The village has granted the Osakis Milling Company a 10-year franchise and the company will make the necessary improvements at the electric light and pumping station.

St. Cloud, Minn.—The Union Power Company, recently organized, proposes to build an electric light and power plant in this city. Power for operating the plant will be furnished by the St. Cloud Water Power Company. The company is capitalized at \$100,000.

Redwood Falls, Minn.—R. F. Wherland, manager of the Aberdeen Engineering Company, is in this city investigating water power and has secured the option for mill lot No. 1 from W. J. Smithers. This is being done with the intention of establishing an electric light and power plant.

Arcola, Mo.—Kansas City and Springfield Southern Railway, C. C. McFann, General Manager, Nevada, Mo., will build electric power plant at Arcola.

Kansas City, Mo.—Wm. F. Lyons has petitioned for a franchise to supply electric light to the eastern part of the city.

St. Louis, Mo.—Isaac S. Taylor, 717 Locust street, has submitted to Mayor Wells plans for a municipal lighting plant, to be erected between the new City Hall and the proposed Municipal Courts Building, large enough to light these two buildings and all other municipal structures within a mile. A civic organization to further municipal ownership of a lighting plant on Aug. 11 adopted a resolution indorsing the purchase by the city of the downtown lighting conduit system and appointed a committee, composed of G. A. Hoehn, C. B. Strothers and others, to get data on the best method of procedure toward an early completion of a city commercial lighting plant.

Red Lodge, Mont.—P. A. Williams, of Billings, is interested in the construction of a central heating plant for Red Lodge.

Kearney, Neb.—The Kearney Water and Electric Power Company is reported organized by W. J. Scott, Secretary, and others, with a capital of \$310,000, to purchase the Kearney canal and electric power plant.

McCook, Neb.—The McCook Electric Light Company has petitioned for a franchise, and if granted same, will construct an electric light plant, at a cost of \$35,000.

General Irving Hale, of Denver, Secretary of the McCook Electric Light Company, met with the City Council here on business regarding the new electric light ordinance. If the franchise is granted a new plant will be built on the outskirts of the city, to cost \$35,000.

Butler, N. J.—The Kennedy Electric Company has secured a franchise from the borough of Butler, Morris County, for an electric lighting system there, and some poles have been set under that franchise. A producer gas power plant will be constructed at Butler and it is planned to supply Bloomingdale and Pompton Plains.

Canajoharie, N. Y.—An election will be held Aug. 23 whether the sum of \$2,800, or so much thereof as may be necessary, be raised for constructing a 15-duct conduit from the canal bridge to the northerly end of Mill street, for the purpose of providing underground accommodations for all public service wires and cables along said portion of Church street.

Raymond, N. H.—The Raymond Electric Light Company is planning to install a 75-kw., 3-phase generator and erect about 6

miles of transmission lines to the near-by towns.

Raleigh, N. C.—The Raleigh Electric Company, of Raleigh; Central Power Company, of Buckhorn Falls, and Consumers' Light and Power Company, of Sanford, N. C., have announced formal merger, the new company being the Carolina Power and Light Company. This company controls the street railway and lighting systems of Raleigh and power systems of Raleigh, Fayetteville and Sanford.

Columbus, O.—The residents of South Columbus want more electric lights, and the South Columbus Improvement Association has taken up the cause for agitation. They fear hold-ups and accidents. Former Councilman F. W. C. Weichers, representing that association, appeared before the Service Board Wednesday and urged the claims of his section for more lights. "Miles of recently built up streets," he said, "are in darkness, and we ask for lamps on them."

Springfield, O.—A power plant is to be installed at the City Hospital immediately at a cost of about \$15,000. It is proposed to erect a separate building which will be used as a heating plant, laundry and quarters for the help. It will be connected with the main building by a tunnel.—W. R. Burnett, Mayor.

Wooster, O.—Plans have been completed for the construction of a municipal electric light plant.

Chickasha, Okla.—The Public Service Company incorporated with \$10,000 capital stock by Thurman H. Williams and Alphonso C. Crose of Chickasha and C. Townsend Blake of Trenton, N. J.

Boyerstown, Pa.—A site has been purchased for Boyerstown's electric light plant and a building 40x100 feet will be erected.

Elwood City, Pa.—An election will be held to pass on the question of issuing bonds for an electric lighting plant.

Greensburg, Pa.—A new \$12,000 power house at the Westmoreland County Home, just completed, collapsed at noon, the damage amounting to \$2,000. A 7-inch concrete floor, 14 feet above the ground, had insufficient support and gave way. The floor was completely wrecked and the north and south walls fell in. Thomas E. Wible & Son, the contractors, claim the structure was built according to the plans and specifications furnished by the architect, and says they offered to place steel supports if the Poor Board would buy them, without additional cost. Engineer experts will decide upon the cause of the collapse.

Hazleton, Pa.—A contract has been awarded the Consumers' Electric Light and Power Company for lighting the streets of the city for ten years, as follows: For enclosed arc lamp, \$59; magnetite luminous, \$58; metallic flame arc, \$55. Hazleton Electric Light Company: For enclosed arc, \$58.50; magnetite luminous, \$55; open arc, \$62.50; metallic flame, \$53.50.

Pottsville, Pa.—Through Promoter W. E. Harrington contracts were signed here today for the erection of a ten-mile electric arc line in Western Schuylkill, to extend from Tower City to Lykens, and to carry the high tension of 2,300 volts. A big power house will be erected on the Schuylkill side of Williamstown, a midway point.

Chester, S. C.—The city has made a contract with the Southern Power Company for all needed electric power from their Great Falls plant. The city agrees to take 75 arc lights at the rate of \$66 each light per year.

Columbia, S. C.—Central Carolina Power Company is understood to be planning immediate construction of plant previously reported; contemplates construction of dam 30 feet high, forming, with power house, a concrete structure 1,400 feet long; power-house installation to include six hydro-electric units, each consisting of four 48-inch turbine wheels mounted on a single shaft direct connected to 2,000-kw. generator.

Company's development is at Turbett Shoals on Broad River, 15 miles above Columbia, and is to transmit 15,000-h.p. by electricity to Columbia, Newberry and Winnsboro. A. B. Leach & Co., 149 Broadway, New York, are financing company. They telegraph the "Manufacturers' Record" that date for opening construction and machinery bids will be decided later and developments will cost \$1,850,000. Viele, Blackwell & Buck, New York City, and Pressey & Weller, Hibbs Building, Washington, D. C., are the Engineers. H. L. Milner, of Washington, D. C., is President of Central Carolina Power Company.

Cuero, Tex.—Buchel Electric Company has, it is reported, awarded contract for reconstruction of power-house, renewal of penstocks, etc., for resuming operation of water power electric plant.

Price, Utah.—Estimates are being prepared for a municipal lighting plant.—A. W. Horsley is interested.

Basic City, Va.—It is stated that the City Council will install an electric light and power plant and will develop about 500-h.p.—W. H. Page, Mayor.

Norfolk, Va.—The Norfolk and Portsmouth Traction Company is about to ask Council for a new franchise to include the lighting and trolley systems of Portsmouth.

Pulaski, Va.—Edgar C. Wiley, Consulting Engineer, Lynchburg, Va., says that he is preparing plans for the development of water power 15 miles from Pulaski for lighting the town. The present system of lamps will be used; estimated cost, \$40,000. Bids will be received probably about Sept. 1.—John T. Loving, Mayor.

Richlands, Va.—Plans are being considered by the Town Council for construction of an electric light plant, water works and sewer systems.—C. B. Neel, Chairman of Committee.

Centralia, Wash.—Plans are being made to furnish the city with electricity for commercial lighting and lighting residences in the near future from the municipal electric light plant.—C. A. Hoarmony, City Electrician.

Pasco, Wash.—The Northern Pacific Light and Power plant, which furnishes light and power to the city, has been destroyed by fire; loss, \$57,000.

Bayfield, Wis.—It is proposed to install new boilers and switchboard at the municipal plant.—F. M. Herrick, Jr., Manager.

Cumberland, Wis.—O. Claussen, of St. Paul, Minn., is preparing plans for municipal lighting plant.

Hudson, Wis.—Council has authorized the issue of \$30,000 bonds to erect a municipal gas plant.—B. W. Utson, Mayor.

Dodgeville, Wis.—The electric company is going to build new building in this city.

Waterloo, Wis.—The citizens are contemplating building a new municipal electric light plant and repairing the transmission lines.—Eugene Porter, Manager.

Battleford, Sask.—Plans are being considered to make about two miles of extensions to the transmission lines of the municipal electric light plant.—W. A. Raymond, Secretary.

FIRE EQUIPMENT

Long Beach, Cal.—The construction of a fire house in Carroll Park is now being considered by the City Council.

Pasadena, Cal.—The City Council is considering the purchase of auto fire engines.—Mayor Earley.

South Pasadena, Cal.—The Board of Trustees has ordered the Fire Commissioners to receive bids for a chemical engine.

Hartford, Conn.—Plans have been submitted by architects for the proposed new fire engine house, to be erected in Fairfield avenue.—Address Fire Board.

Averyville, Ill.—The Village Clerk has advertised for bids for the construction of a new fire engine house.

Evansville, Ind.—The Gamewell Fire Alarm Company has submitted to the Board of Safety an estimate of \$6,000 for a new fire alarm system, using the present overhead system and confining expenditures to the renewal of station equipment and the supplying of additional boxes.

Hanover, Mass.—North Hanover Fire Department has appointed a committee to secure a new chemical wagon.

Haverhill, Mass.—Bids will shortly be advertised for plans and specifications for a two-run fire station, to be located in Ward 6, Sixteenth avenue. It is estimated that the cost of the house will be about \$15,000.

Lawrence, Mass.—A deal will shortly be closed for the purchase of property at Lowell and Oxford streets as a site for the new engine house.—Address Chief Rutter.

North Andover, Mass.—Hartwell, Richardson & Driver, 62 Devonshire street, Boston, have been commissioned to prepare plans and specifications for a new engine house to be built. Bids will be advertised as soon as the plans are completed.

Big Rapids, Mich.—The matter of enlarging and improving the First Ward hose house is being agitated.

Marquette, Mich.—The matter of providing the city with a new and up-to-date hose hose will shortly take definite form.—Mayor Winter.

Jefferson City, Mo.—J. L. Beck, representing the Merchant's League, has petitioned the City Council for better fire protection.

Kansas City, Mo.—A fire station is to be erected at once south of the City Hall, and it has been voted to appropriate \$10,000 for the purpose.

Mr. R. L. Gregory, President of the Board of Public Works, is interested in the establishment of a fire engine house, to cost \$10,000 on Fifth and Main streets.

Omaha, Neb.—Building Inspector Withnell is working on plans for the repair of nine of the city fire engine houses. The total expense will be about \$15,000.

Edgewater, N. J.—John J. McGarry, of this town, has contract for erection of new home for the Eclipse Hose Company of North Bergen.

New Brunswick, N. J.—Mayor is making an effort to form a Fire Department.

Plainfield, N. J.—Common Council recently held a meeting for the purpose of taking up the question of a firehouse for the east side. The structure contemplated would cost about \$11,000.

Cape Vincent, N. Y.—The local Fire Department has closed a deal for the purchase of land adjoining the present quarters of the company for the purpose of enlarging the building.

Granville, N. Y.—The Buckley Hose Company has purchased a lot on Maple street and will erect hose house on the property.

Oneida, N. Y.—Makepeace & Makepeace, of Syracuse, have submitted plans for the new fire station for this town. The plans provide for a two-story building to have accommodations, also, for the Police Department. It will be located at Broad street and Vanderbilt avenue.

Poughkeepsie, N. Y.—Plans are under way for the erection of a new hose house for Lady Washington Hose Company of this city. An appropriation of \$10,500 has been made for the building.

Syracuse, N. Y.—The village Board of Trustees, East Syracuse, recently held a meeting for the purpose of taking up the question of a new fire alarm system.

Zanesville, O.—City is now erecting a new fire station on Forest avenue, in the Tenth Ward. It is expected that the structure will be ready by the first of the year.

Oklahoma City, Okla.—Fire Chief Kessler will shortly recommend to the City Council the erection of a new and modern building to house the downtown fire department.

Easton, Pa.—At a recent meeting of the City Council an estimate for the enlargement of the Third Ward engine house was presented. Several members of the Council are opposed to making enlargements to the present building, but are in favor of building a new structure.

Work has been started on the foundations of the new fire house on Reynolds and Hoyt streets.

Folsom, Pa.—Residents of the towns of Holmes, Burnside & Folsom will shortly hold a meeting for the purpose of organizing a fire company. A central fire station will be built.

Lansdale, Pa.—Plans are on hand for the erection of a new firehouse for the Lansdale fire company.

Bay City, Tex.—Council is arranging to build two-story fire house.

Yoakum, Tex.—The City Council has appointed a committee to ascertain the cost of installing an automobile system in the Fire Department.

Parkersburg, W. Va.—A movement has been started to compel the city to take steps to provide adequate fire protection for the city at once.

Seattle, Wash.—The Board of Public Works has received proposals for the construction of the Fire Department building at the corner of Eleventh avenue, North and East Howe streets.

Bismarck, Wash.—Two lots have been donated by Foster Lumber Company to the city for a site for a substantial firehouse, to be equipped with modern apparatus.

Janesville, Wis.—The City Council has recently passed a resolution authorizing the members of the Fire and Water Committee and the Fire Chief to negotiate for the purchase of a suitable steam fire engine.

ELECTRIC RAILWAYS

Mobile, Ala.—American Securities Company will lay a street car line to Pine Crest Cemetery from the present terminus of the Mobile Light and Railroad Company track on Michigan avenue; either gasoline or horse cars will be used. The line will be about two miles long.

Chico, Cal.—Northern Electric Railway Company proposes to extend its line to Red Bluff and has asked franchise in that city.

Redwood City, Cal.—S. M. Snyder, Fair Oaks, Cal., has asked franchise here for an electric railway.

Selma, Cal.—F. S. Granger, Hanford, Cal., has asked franchise here for an electric railroad through the town. He has also applied at Fowler for a similar franchise and proposes to construct a line from Hanford to Fresno.

Fort Dodge, Ia.—Harry Holm, of the Fort Dodge, Des Moines & Southern Interurban Line, states that within the next sixty days connections will be made with the Fort Dodge gypsum mills.

Marshalltown, Ia.—C. C. Wolf, Parkersburg, Ia., is promoting a project for the construction of an interurban line between Charles City and this place. As projected the road will pass through Greene, Allison, Parkersburg, Grundy Center, and many intervening points between Charles City and Marshalltown.

Sioux City, Ia.—Extending from Sioux City to Council Bluffs and pursuing a route which, instead of following the line of steam railway, will leave the latter at Blencoe and pass through Little Sioux, Magnolia, Logan,

Beebeetown and Crescent, before reaching Council Bluffs, another interurban electric road is now being planned. It is stated that a portion of the route south from Sioux City has been surveyed. The promoters hope, it is stated, to be ready for construction in the Spring.

This line, it is stated, is not the same which was contemplated several months ago. The chief promoter of the present enterprise is said to be W. S. Cook, a contractor and builder of interurban railways. Mr. Cook comes from Pennsylvania, and is understood by those who are interested in the proposed Sioux City-Council Bluffs line to represent Eastern capital, which is ready to finance the enterprise.

Idaho Falls, Ida.—Local Chamber of Commerce has perfected an organization to take up the construction of an electric railway from Idaho Falls, belting the valley and taking in a number of the principal towns. The necessary money has nearly all been pledged and work will begin at once in making the surveys and securing the right of way.

Streator, Ill.—Reports from this place state that grading work will probably be started soon for the Streator extension of the Chicago, Ottawa and Peoria Interurban Line. According to a statement to the City Council, the company has already expended \$840,000 for surveys, right of way, etc.

Frankfort, Ind.—The election held Aug. 11, when the taxpayers of Center township voted on the proposition of giving a subsidy of \$50,000 to the promoters of the Frankfort & Delhi traction line, resulted in the proposed subsidy being defeated by a vote of almost two to one. At Rossville, where they voted on the question of the township giving \$15,000 to aid the company, the proposition was also defeated. The people in the country precincts cast a heavy vote against the subsidy. In the town of Rossville the vote was 82 against and 106 in favor of the subsidy.

Kokomo, Ind.—County Commissioners have granted new Kokomo, Frankfort & Terre Haute Traction Company right of way over the Alto road, in return for which the company must construct a line between this city and Frankfort within three years.

Marion, Ind.—Representatives of the Marion, Bluffton & Eastern Traction Company state that work on the extension of the company's line will begin at once.

Marion & Logansport Traction Company has been incorporated, with capital stock of \$40,000 and principal offices in this city. The company proposes to build an electric railway in and through the following towns: Marion, Sweetser and Mier, in Grant County; Converse, Amboy, North Grove, McGrawsville and Bunker Hill, in Miami County, and Logansport, Anoka and Onward, in Cass County. The incorporators are: George D. Lindsay, Marion; John O. Spurgeon, Sweetser; Meade S. Hays, Marion; John Minnick, Grant County; R. R. No. 10; John O. Wilson, Marion; Lewis S. Marks, Marion; Alva Williamson, Sweetser, and Carl Wise and Victor Wise, Logansport.

Coffeyville, Kan.—Local press reports state that D. H. Siggins of the Union Traction Company will begin work at once on his trolley system at Winfield and the interurban to Arkansas City, both of which places have voted bonds to aid in the work. Surveys are now being made at Winfield under the supervision of J. M. Bradley.

Covington, Ky.—Business men of Florence, Ky., yesterday waited on James C. Ernst, President of the South Covington & Cincinnati Street Railway Company, asking if the company intended to extend the Lewisburg line to Erlanger that it also extend it to Florence, a little more than one mile further. Business men of Erlanger have been advocating the extension of the line to Erlanger for some time, and it was stated yesterday they had recently started subscription papers out to guarantee the securing of a right of way, and the Florence citizens, not to be outdone, state that they will offer as good a proposition for the extension of the line to their town as do the men of Erlanger. It was said that the delegation received assurances that if the line was extended to Erlanger it would also be extended to Florence if as good inducements were offered by the latter as by the former.

Pineville, Ky.—N. R. Patterson, William Burchfield and B. R. Smith, all of Pineville, are taking steps to build an electric line from Pineville to Straight Creek, a distance of about nine miles.

Manchester, Ky.—The Manchester Traction Company will build an electric railway connecting Barbourville, Ky., and Manchester, a distance of about 24 miles. Capital stock, \$100,000. Officers: Louis des Cognets, Lexington, Ky., President; Robert Carnahan, Oneida, Ky., Vice-President; Dr. Hugh R. Manning, Manchester, Secretary and Treasurer.

City of Mexico, Mexico.—The Mexico Electric Tramways Company has applied for permission to build a new line to reach the new Covadonga Park of the Spanish colony.

Springfield, Mo.—Surveys are under way for proposed electric railways from this place to Nixa.—W. H. Schreiber, Engineer.

W. H. Schreiber is Engineer in charge of the survey being made of the proposed electric railway from Springfield to Nixa.

Billings, Mont.—N. S. Poole, an electrical engineer of Townsend, Mont., has received franchise here for electric railway and will, it is said, organize a company to construct the line in the city and through the valley. Surveys are to be made soon.

Ogdensburg, N. Y.—Representatives of New York capitalists are securing right of way for an electric railway from this city through to Edwardsville, a distance of 14 miles, thence across to Morrisstown and along the St. Lawrence river bank to Ogdensburg. The plan also contemplates a line from Edwardsville through Rossie to Gouverneur. Options will be secured later for a line from Ogdensburg to Canton, Potsdam, Massena, Louisville, Waddington and back to this city.

Representatives of New York capitalists are here securing the consent of property owners to building an electric railway from this city through to Edwardsville, a distance of fourteen miles, thence across to Morrisstown and along the St. Lawrence River bank to Ogdensburg. The plan also contemplates a line from Edwardsville through Rossie to Gouverneur. The proposal to carry milk to the stations for 10 cents a can meets with general approval among the farmers. Options will be secured later for a line from Ogdensburg to Canton, Potsdam, Massena, Louisville, Waddington and back to the city.

Oneida, N. Y.—The Oneida Railway Company has completed arrangements to extend its line from Sherrill to Kenwood and has received authority from the Common Council to operate its cars through to Kenwood. It is stated that under the terms of agreement the company will secure the right-of-way and complete the grading by December 1, 1908, and within one year from that date will complete the equipment of the road and put the line in operation.—C. Loomis Allen, General Manager, Utica, N. Y.

Rochester, N. Y.—State Public Service Commission has authorized the Rochester, Corning and Elmira Traction Company, Geo. A. Engert, General Manager, to issue capital stock to the amount of \$380,000 and bonds to the amount of \$1,000,000, the proceeds to be used exclusively for the construction and equipment of that part of the road from Rochester to Conesus Lake, a distance of 25 miles.

Syracuse, N. Y.—The Syracuse and Suburban Railroad Company is planning with the aid of the Chamber of Commerce of this city to extend its line to Pompey, N. Y.

Cleveland, O.—Reaugh Construction Company, Garfield Building, at about \$50,000 for general contract for the concrete.

Chickasha, Okla.—Local press reports quote Scott Jones, of Chickasha, president and promoter of the electric interurban between Chickasha and Sulphur, a distance of about 100 miles, as stating that the project has been financed in New York City, and that the money will be forthcoming just as soon as the bonus specified is raised.

Grants Pass, Ore.—The Rogue River and Oregon Southern Railway Company proposes to build an electric railway from Grants pass to Selma, Ore. The surveys are now being made and it is expected that construction work will be started in December. G. A. Collins is Chief Engineer, Grants Pass.

Belleville, Pa.—The Belleville and Reedsville Railway Company has been chartered to build a line ten miles long in Mifflin county. Capital stock, \$100,000. Officers: L. M. Yoder, Belleville, President; S. M. Patterson, Avondale, Vice-president, and F. W. Warner, Belleville, Treasurer.

Montoursville, Pa.—S. R. Hipple, Vice-president of the Simplex Surface Contact Company, has just received papers covering the patents asked for by the company. The operation of the company is that of trolley cars from an underground current. The invention is that of C. A. Hughes of Williamsport. The system is to be installed at Montoursville. The company has been organized with a capital of \$1,000,000. William Conwell, Chief Electrical Engineer for the Westinghouse Company of Pittsburgh, is President.

Edgefield, S. C.—The Augusta and Edgefield Electric Railroad Company, it is reported, will advertise for bids to survey the route from Augusta, Ga., via Edgefield to Greenwood, S. C. W. P. Calhoun is Chairman; W. A. Strom and S. B. Mays have the matter in charge. Company is to be organized soon.

Georgetown, S. C.—H. C. Case, President of the Georgetown Electric Company, and Laurens Mouzon have applied to the City Council for a franchise to build a street railway in Georgetown.

Aberdeen, S. D.—Articles of incorporation have been filed with the Secretary of the State for the Aberdeen Street Railway Company, with a capital of \$250,000. The purpose

of this company is to construct 20 miles of line in Aberdeen and vicinity. Charles T. McCoy, Frank H. Hagerty and others are incorporators.

Huron, S. D.—Articles have been filed by the Huron Street Railway Company, which is capitalized at \$50,000. John W. Smith, Frank E. Stevens and others are incorporators.

Dennison, Tex.—A. D. Cunningham, of St. Louis, Mo., is surveying a line for the Fort Worth, Weatherford and Mineral Wells Interurban.

Plainview, Tex.—The City Council has granted a franchise to the City Railway Company to build an electric street railway in Plainview. C. D. Lovelace is the promoter. The line will first be built to the depot, then to College Heights.

Urbana, Va.—Surveys are under way for the construction of an electric railway between West Point, Va., and this city. Col. C. P. E. Burgwyn, Richmond, Va., is Engineer.

West Point, Va.—Survey is being made for an electric railway to be built from West Point to Urbana, 25 miles. C. P. E. Burgwyn, 2 North Tenth street, Richmond, Va., is Engineer. The railway may build branches in the peninsula between the York and Rappahannock Rivers as far down as New Point Comfort.

Thermopolis, Wyo.—The Thermopolis and Hot Springs Street Railway Company will begin the construction of two miles of standard-gauge track soon. Material is purchased. The road will connect Thermopolis, Big Horn and Hot Springs. The overhead trolley system will be used, and the company will rent power from the Hot Springs Electric Light and Power Company. Capital stock authorized, \$50,000; issued, \$10,000. Bonds authorized, \$25,000. Officers: S. A. Broadwell, President; C. M. Broadwell, Secretary and Treasurer; J. J. Conlon, General Manager, all of Thermopolis.

BRIDGES

Montgomery, Ala.—Ordinance providing for the construction of reinforced concrete bridge on the extension of Madison avenue was adopted by City Council. Bridge will be over tracks of Central Georgia Railway. Cost of bridge will be paid out of the road fund.

Van Buren, Ark.—Construction of a free bridge over the Arkansas River at this place, to be built by Crawford and Sebastian counties, is under consideration.

Los Angeles, Cal.—The Naples Company has applied for permission to construct two bridges: one across an arm of Alamitos Bay and the other over the channel of San Gabriel River.

South Pasadena, Cal.—The erection of a bridge over the Arroyo Seco is contemplated. The structure is to be 1,000 feet long and cost about \$25,000.

Ventura, Cal.—Plans are about completed for the new bridge which the County Supervisors propose to erect over the Santa Clara River at Bardsdale. The main street structure will be 1,100 feet long, the south approach 1,600 feet, and the north approach 500 feet.

Bridgeport, Conn.—The War Department at Washington, D. C., has approved the plans and specifications and granted permission to the Congress Street Bridge Commission to construct the bridge across the Pequannock River at Congress street. Probable cost, \$250,000.

Wilmington, Del.—The regular meeting of the Board of Park Commissioners will be held soon, when Engineer Mack will present plans and specifications for a concrete bridge to replace the old suspension bridge at the foot of DuPont street, across the Brandywine Creek.

Milledgeville, Ga.—Baldwin County Commissioners contemplate erecting bridge across lowland at Oconee River bridge.—Address Secretary of the Commission.

Chicago, Ill.—The Sanitary District has authorized its Chief Engineer, G. M. Wisner, to procure bids for the construction of foundations of the Chicago and Northwestern Railroad bridge at Mayfair crossing of North Shore Channel.

Erie, Ill.—Town has voted to expend \$1,500 for repairing Erie end of bridge over Rock River. Portland has also voted \$1,500 for the work.

Bluffton, Ind.—County Commissioners will ask appropriation of \$4,465 for building 13 bridges next year.

Ft. Wayne, Ind.—The County Bridge Commissioners are considering the matter of building a new bridge at Wells street.

Marion, Ind.—The Marion County Commissioners will build several bridges before winter.

Morocco, Ind.—The Commissioners of Jasper and Porter counties will build a steel bridge across the Kankakee River, to cost \$5,000, of which Porter county will pay three-fifths.—C. H. Rensselaer, County Auditor.

Terre Haute, Ind.—County Council will be asked to appropriate \$3,000 for repairing bridges damaged by floods.—George Grimes, County Engineer.

Valparaiso, Ind.—Porter and Jasper counties will build a \$5,000 steel bridge over the Kankakee River near Morocco.

Kansas City, Kan.—The Edgewater Terminal Company has filed plans with the Department at Washington, D. C., for the construction of a bridge over the Kaw River, near Kansas City, Kan. The plans are for a steel structure to cost \$400,000.

Louisville, Ky.—Queen and Crescent Route, H. E. Warrington, Chief Engineer, Cincinnati, O., will rebuild High Bridge over Kentucky River, one span to be 840 feet long. Estimated cost, \$1,000,000.

Takoma Park, Md.—The building of a bridge at Carroll avenue, over the Sligo River, at a cost of about \$10,000, is reported under consideration. The Street Commissioner has been directed to confer with the Washington Sanitarium Association regarding the matter.

Towson, Md.—County Roads Engineer Henry Y. Shirley has reported to the County Commissioners that the damage to roads and bridges by the recent heavy rain storms will amount to about \$40,000. There were 25 bridges washed away. The work of replacing the bridges and repairing the roads will begin at once.

Fenton, Mich.—A bridge will be built across the Flint River near the pumping station at Fenton, Genesee county.—Address County Clerk Blackney, at Flint.

Hillsdale, Mich.—State Railroad Commission has suggested that this city should rebuild the Hollett street bridge and that the Lake Shore & Michigan Southern Railway should build the Bacon street bridge.

Port Huron, Mich.—Judge Tappen has granted peremptory writ of mandamus against the Grand Trunk railway directing that they build without delay an overhead bridge on Military street, in the south end of the city, where their tracks run and where a temporary structure has done service for some time.

Crookston, Minn.—Matter of issuing bonds for construction of a new bridge over Red Lake River to Simpson's Addition will be voted upon.

Missoula, Mont.—City will call for bids soon for constructing bridge at Van Buren street, after plans of City Engineer.

Rensselaer, N. Y.—New York Central and Hudson River Railroad has filed plans for proposed new bridge over its tracks at Columbia avenue. F. S. Hunt, Division Engineer, N. Y. C. & H. R. R. R., 125th street, New York, will be in charge of the work.

Cleveland, O.—A plan is favored by President Spingborn, of the Service Board, for eliminating the draw of the Central viaduct by connecting the structure into a high level bridge. It is proposed to separate the portion of the viaduct that will be used for street car service from the rest of the roadway by curbing. The street car tracks would be in the middle and the roadway on either side would be widened so as to allow room for vehicles to pass each other. This would necessitate the widening of the bridge. In addition, the under supports of the draw span would be removed. The span would be made fixed and overhead trusses would be used so that there would be no obstruction to navigation. It is estimated that the entire improvement could be carried out with an expenditure of \$200,000.

The Baltimore and Ohio Railroad Company, Baltimore, Md., proposes to erect a roller lift bridge over the Cuyahoga River at Cleveland. Plans are being prepared by the company's engineers.

Dayton, O.—County Commissioners are considering construction of a bridge over the Miami River between Harrison and Madriver Townships.

Defiance, O.—City Engineer Toberin has plans under way for a lift bridge to be erected over the canal at Fifth street.

Toledo, O.—August 26 bids will be received for the purchase of \$525,000 4 1/4 per cent. city bridge bonds.—Ames McDonald, City Auditor.

Roseburg, Ore.—The Council will offer for sale \$35,000 in bonds to pay one-half of the cost of constructing a cement-steel bridge over Deer Creek.

Springfield, O.—The citizens will shortly be asked to vote on a plan for city parks.

Harrisburg, Pa.—The City Engineer has been instructed to prepare plans for the construction of a bridge at Derby and 18th streets.

Knoxville, Tenn.—Special Viaduct Committee has engaged Edwin Thatcher, of Concrete Steel Engineering Co., New York, and W. H. Burk, of Knoxville, to prepare plans for proposed reinforced concrete bridge or viaduct to be built at Asylum avenue.

The plans of Edwin Thatcher, of the Concrete Steel Engineering Company, for the Asylum avenue viaduct, are now in the

hands of S. D. Newton, City Engineer, and the plans of W. H. Burk were sent to the committee some time ago. Col. Thatcher's plans provide for a concrete arch reinforced structure. Mr. Burk's plans provide for a girder bridge with steel bars. The committee will take up both plans, which then will be referred to the Louisville and Nashville Railroad and Southern Railway to find out how much they will give toward the construction of the structure.

Nashville, Tenn.—Two new bridges will be constructed by the Nashville, Chattanooga and St. Louis Railway, one of which will be built over the Harpeth River near Pegram, 21 miles from the city, and the other over Elk River, near Fayetteville.

Dallas, Tex.—Two steel bridges will be erected by the county. Bids will be asked for at once.—County Auditor Fearn.

Green Bay, Wis.—An election will be held September 1 to decide the question of issuing \$150,000 in bonds for building a bridge across the Fox River at Walnut Street.

Kenosha, Wis.—This city will shortly take up the matter of a city park system.

La Crosse, Wis.—The Park Commission is planning to spend about \$100,000 in making improvements to parks and boulevards.

Milwaukee, Wis.—The Metropolitan Park Commission will again take up the Bay View Lake shore park proposition.

Harrisburg, Pa.—A project is being considered for the extension of Capitol Park.—City Engineer Cowden.

The Park Commission and the Water Department have entered into an agreement to fill in the pathway at the rear of the pumping station at North street, and the garden of the William R. Fleming estate, just south of the pumping station. It will require 12,000 cubic yards of earth to fill in the bank, and when the fill-in is completed the pathway along the river will extend uninterrupted from Vine to Herr streets.

Manayunk, Pa.—A movement is on foot to establish a public park and playground in the Lower Roxborough section.

McKeesport, Pa.—The Board of Park Commissioners is considering land in Hill City for public park.

Troy, O.—City has plans under way for the establishment of a new park in Ninevah district.

Salt Lake City, Utah.—Plans are being considered for laying out a city park near Ensign Peak.

Atlantic City, N. J.—Frank Nelligan, Arctic and Missouri avenues, is interested in the construction of a garbage incinerator of about 50-ton capacity.

New York, N. Y.—A plan is under consideration by the Executive Committee of the Allied Parks Association, of which Eugene Philbin is President, and which will be submitted to the Charter Revision Commission for additional and better parks.

Rochester, N. Y.—Residents of the Fifth Ward are starting an agitation for a public playground in the vicinity.—Alderman Heindl.

The matter of buying property at intersection of Webster avenue and Melville street for the establishment of a new park will be taken up by the taxpayers of the 18th Ward.

MISCELLANEOUS

Pasadena, Cal.—The City Council has approved an ordinance providing for the construction of a garbage crematory.—Herman Dyer, City Clerk.

A new garbage incinerating plant is proposed, at a cost of \$24,000.

Florence, Col.—The Civic Improvement League has purchased a block of land on West Second street for park purposes.

Wilmington, Del.—The Board of Park Commissioners will condemn land bounded by Twelfth and Bonnet streets and the Brandywine, same to be used for park purposes.

Durbin, Ga.—City has accepted 13 acres of land tendered by the estate of the late John Stubbs for park purposes.

Terre Haute, Ind.—Garbage plant and park bonds amounting to \$70,000 are reported sold.

Baltimore, Md.—Two lots of ground within the boundaries of the Philadelphia road, Fayette street and Kenwood avenue have been condemned. The property will be used for a public park.

Kansas City, Mo.—Property at Pacific, Missouri, Holmes and Charlotte streets is looked upon with favor as site for public playground.

St. Louis, Mo.—A public hearing recently took place before the Ways and Means Committee of the House of Delegates, to discuss the bill providing for the purchase by the city of the fair grounds for a public park and playground.

Rankin, Pa.—Bids recently received for garbage plant have been rejected. Council will probably readvertise.

BIDS RECEIVED

Selma, Ala.—The city has awarded the contract to Crockett Paving Company, Birmingham, Ala., at \$48,647, for paving seven blocks on Water street with vitrified brick, and to the Memphis Asphalt and Paving Company, Memphis, Tenn., at \$33,979, for paving three blocks on Broad street with asphalt.—Julien Smith, City Engineer.

Los Angeles, Cal.—R. McDowell was awarded the contract, at \$31,495, for the construction of sewer in South Park avenue, from Fifty-fourth street to Vernon avenue; Martin Mlagenovich has the contract, at \$17,150, for the construction of a sewer in Main street, from Fifty-eighth street to Vernon avenue, and Joe Chutuk secured the contract, at \$949.80, for the construction of a sewer.

Bridgeport, Conn.—The Pierce Manufacturing Company, 95 Wall street, submitted the lowest bid on Aug. 5 for laying 4,000 feet of sewer in Fairfield avenue at the following bids: \$1.68 a foot for 14x21-inch pipe, \$1.29 a foot for 10x19-inch; \$3.85 per cubic yard for rock excavation; \$3.50 per foot for manholes; \$37.50 each for sewer wells.

Hartford, Conn.—The following estimates for fire houses have been submitted to Council: Brocklesby & Smith: Three-entrance house, \$15,604; two-entrance, \$14,789. Isaac A. Allen, Jr.: Three-entrance, \$15,992; two-entrance, about the same. Zunner & Sellew: \$13,834 (without heating, lighting and plumbing, as included by the others).

The following contracts for State road work, bids for which were opened on Aug. 11, have been awarded by the State Highway Commissioner:

Town of Avon, 2,325 linear feet of macadam-telford, on the Simsbury road, to A. C. Sternberg & Son, West Hartford, \$2,935. Other bidders were: Amos Bridges' Sons, Hazardville, \$3,220; Connecticut Contracting Company, Middletown, \$3,304; Lane Construction Company, Meriden, \$3,520; Joseph Mascetti, Torrington, \$3,861; T. F. Foley, South Norwalk, \$3,499; F. Arrigoni & Bro., Durham, \$4,490; O. T. Benedict, Pittsfield, Mass., \$4,024; Olmsted & Olmsted, East Hartford, \$3,627.

Town of Avon, 5,645 linear feet of macadam-telford on the Hartford-Albany turnpike, to the Connecticut Contracting Company, Middletown, at \$6,889. Other bidders were: Lane Construction Company, \$7,186; Joseph Mascetti, \$10,908; T. F. Foley, \$5,524; A. C. Sternberg & Sons, \$8,072; F. Arrigoni & Bro., \$11,177; O. T. Benedict, \$8,879; Olmsted & Olmsted, \$9,484; one 24-inch and one 15-inch tile pipe culverts are required on this contract.

Town of Bristol, 969 linear feet of macadam and 375 linear feet of telford, on Center street, to Pierson Engineering and Construction Company, Bristol, Conn., at \$1.25 for macadam and \$1.75 for telford. Other bidders were: Joseph Mascetti, \$1.90 and \$2.50; A. C. Sternberg & Sons, \$1.32 and \$1.74.

Town of Simsbury, 5,639 linear feet of macadam-telford, 1,920 linear feet of wall, railings and bridge abutment, to the Connecticut Contracting Company (lump sum), \$11,886, with extra for cobble gutters, railings and telford. Other bidders were: A. Brazos & Sons, Middletown, \$2.80 for macadam; \$3.30 for telford; \$2.997 for wall and \$1,400 for bridge abutment; Amos Bridges' Sons, Hazardville, \$3.24, \$3.84, \$2,990 and \$1,000; T. F. Ley Company, Springfield, Mass., \$4.10, \$4.35, \$3,107 and \$300.

Town of Windsor, two sections aggregating 4,800 linear feet of macadam-telford, to the Connecticut Contracting Company, Middletown, at \$8.974. Other bidders were: A. Brazos & Sons, \$9,611; Amos Bridges' Sons, \$11,181; Lane Construction Company, \$1,068; Thomas Kearney, Meriden (one section only), \$8,260; one 15-inch tile culvert required on this work.

New Haven, Conn.—The Rudolph S. Blome Co., 79 Dearborn street, Chicago, Ill., has been awarded the contract for paving with concrete portions of Fair and Chapel streets, at \$3,469 and \$12,710, respectively. Bids were opened on Aug. 6.

Washington, D. C.—Bids were received as follows on Aug. 17 at the office of the Commissioners of the District of Columbia, for the construction of two sewers: (a) K. J. Beall Construction Company, (b) Warren J. Beenler Company, (c) James A. Coyle, (d) E. C. Gummell, all of Washington, D. C. New Hampshire avenue sewer: Ordinary excavation, (a) 74 cents, (b) 85 cents, (c) 69 cents, (d) 78 cents; sewer brick masonry, (a) \$15, (b) \$15, (c) \$18, (d) \$15; 21-inch pipe, (a) 99 cents, (b) \$1.10, (c) \$1.10, (d) \$1.05; 18-inch pipe, (a) 89 cents, (b) 95 cents, (c) \$1, (d) \$1; 12-inch pipe, (a) 70 cents, (b) 75 cents, (c) 79 cents, (d) 75 cents. Arkansas avenue sewer: Ordinary excavation, (a) 65 cents, (b) 80 cents, (c) 68 cents, (d) 78 cents; sewer brick masonry, (a) \$13.50, (b) \$15, (c) \$16, (d) \$14;

12-inch pipe, (a) 70 cents, (b) 70 cents, (c) 69 cents, (d) 78 cents.

Bloomington, Ill.—J. P. Lain has been awarded a contract for laying 5,100 square yards brick on sand cushion for \$1.75 per square yard, excavation included; for 3,000 feet combined curb and gutter, 42 cents. Other bidders for paving were: O. W. Dunlap, \$1.93; Cescent Construction Company, \$1.83. Geo. M. Barisam was awarded a contract for cement sidewalk at .085 cents per square foot.—C. F. Fauntz, City Engineer.

Centralia, Ill.—The F. M. Prescott Company, Milwaukee, Wis., was awarded the contract on Aug. 5 by the City Council for installing a triple-expansion pump at the water works plant, at \$7,640.

Des Plaines, Ill.—The Joliet Bridge Iron Company, 109 Randolph street, Chicago, was the lowest bidder, at \$2,785, for the erection of a reinforced concrete arch bridge over the Higgins Creek, at Orchard place, town of Maine.

Dixon, Ill.—The Clinton Bridge and Iron Works, Clinton, Ia., has the contract, at \$1,750, for the construction of two bridges in Maytown township.

East St. Louis, Ill.—The following bids were received on Aug. 11 by the city for street paving: Missouri avenue: Fruin-Colnon Contracting Company, \$40,560; Myers Construction Company, Third National Bank Building, St. Louis, Mo., \$33,166 (awarded contract); Skrainka Construction Company, \$38,213; Walter Coonan, \$43,711; W. H. Hill, \$33,938; Keely & Gaynard, \$36,778; Giesel Construction Company, \$39,294; Engineer's estimate, \$39,347. Second street: Keely & Gaynard, \$10,409 (banner brick); Giesel Construction Company, \$11,828 (banner); Myers Construction Company, \$9,568 (banner), \$9,568 (Alton brick), (awarded contract); Walter Coonan, \$11,064 (banner); W. H. Hill, \$10,497 (banner); Engineer's estimate, \$11,382.

Woodstock, Ill.—The contract for the construction of a new iron and concrete bridge across Fox River at Rawson's Point has been let to the Continental Bridge Co., Monadnock Building, Chicago, Ill., at \$6,500, the work to be completed by Nov. 1.

Frankfort, Ind.—The Board of Commissioners of Clinton County let contracts for constructing gravel roads to the following parties: Isaac C. Riegle road, R. C. Clark, Frankfort, \$3,210; C. T. Derrick road, W. E. Bolt, Cyclone, Ind., \$4,093; T. C. Holloway road, Holt & Milroy, Frankfort, \$5,764.32; Jas. N. Amos road, O. J. Fatzinger, Frankfort, \$4,765; John C. Shackley road, O. J. Fatzinger, \$4,350; Samuel McCammon road, W. F. Boyer, R. F. D. No. 23, Sheridan, Ind., \$1,997; H. D. Beisel road, R. C. Clark, \$1,623; J. A. Irby road, R. C. Clark, \$3,883; H. F. Clark road, Frank W. Wayt, Michigantown, Ind., \$1,756; A. Pickering road, J. J. Kelleher, Frankfort, \$2,963; S. L. Louks road, Frank W. Wayt, \$4,898; A. J. Beisel road, J. J. Kelleher, Frankfort, \$1,040; McGray road, Kelly Bros., Frankfort, \$1,842.—C. F. Cromwell, County Auditor.

Des Moines, Ia.—Bryant, Ford & McLaughlin, Waterloo, Ia., have the contract for paving with asphalt Fortieth, Forty-first and Forty-second streets, Center drive and Forty-fourth street.

Keokuk, Ia.—Contracts were let as follows for constructing sewers: Cameron & McManus, 500 feet 8-inch vitrified pipe; Jacob Spring, 500 feet 8-inch pipe; McManus & Tucker, 700 feet of 24-inch pipe; Ette & Prosse, 400 feet of 8-inch pipe, bidders of Keokuk.—H. T. Moore, City Clerk; J. Ross Robinson, City Engineer.

Webster City, Ia.—This (Hamilton) county let the following contracts for 44,000 feet of open and tile drainage ditch No. 59: Tile, Tuscola Supply and Construction Company, Webster City; open, Northern Construction Company, Elkhart, Ind.—O. A. Cragwick, County Auditor.

Salina, Kan.—This (Saline) county has let contract to Wilmarth & Zerbe, at \$2,702, for two steel bridges, one 70-foot span and one 90-foot span.—P. J. Burns, County Clerk.

Topeka, Kan.—J. H. Maxwell has the contract for a tile and concrete sewer, to cost \$65,000.—C. B. Burge, City Clerk.

Cynthiana, Ky.—Woods Bros., Paris, Ky., were awarded the contract for the construction of abutments and wing walls, dirt fills and macadam at Silas Creek, Bourbon and Harrison Counties.—B. F. Bedford, Judge of Probate, Harrison County.

Dayton, Ky.—The City Council on Aug. 10 opened bids for trunk sewers along and under Vine, Main and McKinney streets. There were five bidders as follows: Walter Bros., of Dayton, \$46,136 for a brick sewer and \$38,499 for concrete; Stack & Co., \$39,313.75 for brick, \$35,762.20 for concrete; Bacus & Co., of Dayton, O., \$48,620 for concrete, \$36,426.20 for brick; McLane & Bros., of Newport, Ky., \$41,114 for brick, \$36,477 for concrete; the Douglass Heating and Plumbing Company of Cincinnati, O., \$35,427 (awarded contract).

Contract for three trunk sewers was

awarded to the Douglass Heating and Power Company, Cincinnati, O., at \$35,420.55.—Chas. A. Bird, City Clerk; Geo. G. Lindsey, Engineer, Newport, Ky.

Maysville, Ky.—Frazier & Forman, Lexington, were awarded the contract to lay Maysville's new sidewalks by the City Council here over several close competitors.

Bath, Me.—The contract for the construction of about 7,000 feet of sewers was awarded on Aug. 10 by the Street and Sewer Commission to the Hanscom Construction Company, 1102 Exchange Building, Boston, Mass., at about \$26,000.

Annapolis, Md.—The McCay Engineering Company, Garner W. Denmead, Secretary, 9 East Lexington street, Baltimore, Md., has been awarded the contract for the extension of the water system at the U. S. Naval Academy here.

Baltimore, Md.—P. Reddington was awarded the contract for paving Fairmount avenue, between Kenwood avenue and the city limits, with vitrified brick for \$16,487.01. Contract for building the road to the disposal plant of the new sewerage system at Back River, was awarded to L. B. McCabe for \$5,910.60.

Salem, Mass.—The Art Metal Construction Company, of Jamestown, N. Y., lowest bidder, at \$25,000, for the steel furniture for the new probate building Salem, was to-day awarded the contract by the Essex County Commissioners after a conference with the special Board of Construction of the new Registry of Deeds Building, Salem. The award was made by a unanimous vote.

The contract for the electric elevator for the same building was awarded to the James Otis Elevator Company, Boston, the bid being \$3,725.

Salisbury, Md.—The contract for the construction of a steel plate girder drawbridge over the Wicomico River, at the crossing of Main street, was awarded by the County Commissioners on Aug. 18 to the York Bridge Co., of York, Pa., at \$4,800. Other bidders were: Lauer & Harper Company, Baltimore, Md., \$5,243; Roanoke Bridge Co., Charles-town, W. Va., \$5,380.—H. M. Clark, Roads Engineer.

Boston, Mass.—The Lockwood Manufacturing Company has secured the contract at \$23,500 for repairing engines Nos. 3 and 4 at the pumping station, Calf Pasture.

Detroit, Mich.—Bids received Aug. 6 for new paving showed that the season's record for low prices had been broken. F. Porath & Sons won out for the jobs of repaving Second avenue, from the boulevard to Euclid avenue, and for the repaving of Twenty-fifth street, between Dix and Toledo avenues. In each instance the contractor's bid was \$1.75 per square yard, or 2 cents a yard lower than any bid for cedar paving received this year. Last year the same grade of paving cost the city from \$2.10 to \$2.25 per yard. The successful bid for the Second avenue job was \$13,650.76; that for Twenty-fifth street, \$6,184.51.

Thomas E. Currie will pave four alleys with brick at an aggregate cost of \$6,173.47.

The Common Council awarded contract to Whitehead & Kales, Beecher avenue, and M. C. R. R., at \$5,885, for repairing the Twelfth street bridge.

The Board of Wayne County Road Commissioners let contract to J. A. Mercler, at \$16,000, for 2,155 feet of paving on Michigan avenue.

Ishpeming, Mich.—Johnson & Munson, of Ishpeming, are the lowest bidders for the construction of a sewer in the Sixth Ward, at \$9,594. The next lowest bid was that of E. R. Harding, of Racine, Wis., at \$12,644. The other bids were as follows: Charles Johnson, Oshkosh, Wis., \$14,078; Pastoret & Lunz, Duluth, Minn., \$13,018; William Trebilcock, Ishpeming, \$14,367; Northern Construction and Engineering Company, Escanaba, Mich., \$13,551; Robert R. French, Marquette, Mich., \$14,781.

Marshall, Mich.—The contract for constructing a reinforced concrete bridge over the Kalamazoo River at South Marshall avenue has been awarded to O. J. Reniger, of Marshall, at \$6,400.

Duluth, Minn.—George R. King was the lowest bidder on the contract for grading East Sixth street, from Twenty-eighth avenue east to Twenty-fourth avenue east, and Twenty-fourth avenue east to Vista street, the contract to include constructing a sewer over the same route. The bids were opened by the Board of Public Works. There were two bidders, George R. King and P. McDonnell. The figures of the first were \$8,957.80 and the second \$9,196. This was about all the business of any importance to come before the board.

Janesville, Minn.—W. D. Lovell, Minneapolis, Minn., was awarded the contract, at \$10,834, for installing water system.

Redwood Falls, Minn.—Forrestal & Feyen, St. Paul, have the contract, at \$100,000, for constructing the Brown and Redwood Counties judicial ditch, and J. Sherwood, Litchfield, Minn., has the contract for ditch No. 9.

St. Paul, Minn.—O'Neil & Preston were awarded the contract, at \$1,490, for the construction of a sewer on St. Anthony avenue, from Milton to Chatsworth street, and P. J. Ryan has the contract for the construction of a sewer on Hague avenue, from Griggs street to a point 200 feet west.

Keogh Bros. have the contract for grading and improving Hatch street, from Rice street to Park avenue.

Winnebago, Minn.—J. W. Turner Improvement Company, Des Moines, Ia., has the contract, at \$1,072, for 1,030 feet of 8-inch sewer in East Cleveland street, Winnebago.

St. Louis, Mo.—Board Public Improvements has awarded paving contracts aggregating \$170,000 as follows: Minnesota street, William R. Bush Construction Company, \$19,766; Gano, James T. McMahon, \$9,041; Hull place, Webb-Kunze Construction Company, \$3,380; Humphrey, Gustavus & Heman, \$15,082; Maffitt, Hanick Quarry and Construction Company, \$13,044; Brannon, Webb-Kunze Construction Company, \$19,708; Pulasaki, G. Eyermann & Bro., \$4,707; Third, Webb-Kunze Construction Company, \$11,186; Oregon, G. Eyermann & Bro., \$5,485; Lambdin, Hanick Quarry and Construction Company, \$6,755; Lambdin, Hanick Quarry and Construction Company, \$10,490; Sullivan, William H. Redemeyer, \$12,756; Juniata, William R. Bush Construction Company, \$24,317; Eighth, from Franklin to Biddle, Herman Construction Company, \$9,288. All of the above streets, except Eighth, are to be paved with brick. Eighth street is to be paved with granite.

Butte, Mont.—P. Oren was given the contract for a sewer on Galena from Gaylord to Warren, for \$695, the estimate of the Engineer being \$850. J. Huddleston was given the contract for grading East Copper for 72 cents a cubic yard, the estimate being 65 cents. Bids on the grading of Woolmen were rejected as too high above the estimate. C. M. Bardsen was given the contract for grading Platinum, from Colorado to Dakota, for 48 cents a yard for embankment. J. Huddleston was given the contract for grading Gold street for 48 cents for embankment and 10 cents for excavation.

Lincoln, Neb.—Bids were opened by the Water Committee Aug. 14 as follows: Olson & Lawrence, Lincoln, Neb., one bid, according to specifications, \$22,525; Gould Construction Company, one bid, \$20,577.43; American Light, Heat and Water Company, Kansas City, two bids, \$16,880, alternate bid \$16,027; Cook Construction Company, Des Moines, Ia., according to specifications, \$17,057; M. Foru, Cedar Rapids, Ia., two alternate bids, \$15,999.97 and \$16,394; Wm. Worthman, Seward, Neb., alternate bid, \$17,250.—Thos. H. Pratt, City Auditor.

Sidney, Neb.—Bids were received July 27 by this city, Hershey S. Welch, North Platte, Neb., Engineer, for constructing water works, the contract being awarded to the Des Moines Bridge and Iron Works at \$18,750. The work includes the following: Stone pumping station, duplex pump, 500,000 gallons; gasoline engine, 28 h.p.; 125,000-gallon tank and 20-foot steel tower, large well 16 feet in diameter, 2,050 feet 8-inch pipe, 1,350 feet 6-inch pipe, 6,740 feet 4-inch pipe, 20 hydrants, valves, fittings, specials, etc., as per plans, 6,000 feet 2-inch galvanized iron service pipe. The unit prices to be used for additions and deductions from quantities bid upon were as follows: (1) Standing for F. H. Wheeler, Havelock, Neb., (2) for J. J. Donegan, Shenandoah, Ia., and (3) for Des Moines Bridge and Iron Works: 8-inch cast-iron pipe laid, (1) \$1.10, (2) \$1.02 (3) \$1.05; 6-inch cast-iron pipe laid, (1) 96 cents, (2) 82 cents, (3) 82 cents; 4-inch cast-iron pipe laid, (1) 70 cents, (2) 60 cents, (3) 61 cents; 2-inch galvanized-iron pipe laid, (1) 38 cents, (2) 32 cents, (3) 35 cents; 8-inch valves and boxes, (1) \$30, (2) \$25, (3) \$24; 6-inch valves and boxes, (1) \$26, (2) \$20, (3) \$19; 4-inch valves and boxes, (1) \$21, (2) \$17, (3) \$15; hydrants, 4-inch inlet, (1) \$38, (2) \$33, (3) \$31; cast-iron specials, per pound, (1) .05 cents, (2) .04 cents, (3) .035 cents. For furnishing tank and tower Diahe & Williams-Mount Company, Omaha, Neb., bid \$3,590. Fairbanks, Morse & Co., Omaha, Neb., bid 14.67 cents for galvanized pipe, f. o. b. Sidney, and \$1,992 for 32-h.p. engine and 50,000-gallon duplex pump. Weber Gas Engine Company, Omaha, Neb., bid \$1,925 on a 30-h.p. Deming triplex pump. Jas. E. Clow & Sons, Chicago, Ill., made the following bids for pipe and valves, f. o. b. Sidney: 8-inch, \$36.50; 6-inch, \$36.50; 4-inch, \$37.50; 2-inch galvanized pipe, 14.67 cents; 8-inch valves and boxes, \$20.25; 6-inch valves and boxes, \$13.25; 4-inch valves and boxes, \$8; hydrants, 4-inch inlet, \$27; cast-iron specials, 2 1/2 cents.

Harrison, N. J.—Bids were received for paving Davis avenue, from Harrison avenue to the Erie Railway, as follows: John F. Shanley & Co., \$10,796.50; Van Kuren & Son, \$11,253; Geo. S. Williams, \$11,997.50.

Jersey City, N. J.—The Street and Water Board Aug. 17 awarded the contract for repaving Twelfth street, from Coles street to

Jersey avenue, and from Erie to Henderson streets, to Henry Byrne, subject to the concurrence of the Finance Board; Byrne's bid was 75 per cent. of the standard.

Newark, N. J.—Bids for the grading and paving of Fairview avenue, from Bloomfield avenue, Verona, to the Pompton Turnpike road, Cedar Grove, were opened by the Roads and Assessments Committee of the Board of Freeholders.

Eight bids were received, the lowest being that of P. A. Matthews, of Caldwell. His figure is \$17,748.45. F. A. Marley bid \$18,190. The other bids received were: Alfonso Rusamano, \$33,917.30; Francisco Brothers, \$19,800; B. F. Shanley Company, \$25,000; Harrison Construction Company, \$25,415; John Doriety & Sons, \$19,799.25; Donato Fusco, \$21,148.50.

Phillipsburg, N. J.—We are officially advised that bids were received by the Road Committee of the Board of Chosen Freeholders on Aug. 14 for the following roads in said county, known as the Morris Turnpike and the New Brunswick Turnpike, the former beginning at the Lopatcong Township line and extending to Fillmore street, a distance of 6,179 feet; the latter beginning at the end of the brick pavement on South Main street, Phillipsburg, and extending to the Pohatcong Township line, a distance of 3,966 feet. The lowest bidders were: Morris Turnpike, G. M. Frech, \$9,796; New Brunswick Turnpike, Miles Tighe Contracting Company, \$8,935.—Joseph R. Thatcher, Director Board.

Binghamton, N. Y.—The Board of Contract and Supply awarded contract to A. L. Willey, Savings Bank Building, for paving Conklin avenue with brick.

Gates, N. Y.—Six bids for the construction of a sewer in Jay street from the Field road to the West Side sewer here were opened on Aug. 13 at the office of W. R. Storey, Town Engineer. The bids were as follows: William Fuller, \$2,936; Whitmore, Rauber & Vicinus, \$23,058; F. C. Lauer & Sons Co., \$23,365; Brayer & Albaugh, \$24,241; Denniston & Co., \$25,721; H. B. Hooker & Sons, \$26,434.

Ithaca, N. Y.—The Park Commissioners awarded contract to P. D. Conley, 338 East State street, at \$2,711, for constructing a 36-inch concrete conduit, from Williams Creek to the inlet.

Lakemont, N. Y.—The Board of Trustees of Starkey Seminary awarded contract to L. H. Durland, Son & Co., Watkins, N. Y., for an extension water works system.

Long Island City, L. I., N. Y.—The contract for regulating, grading and paving with asphalt block on a concrete foundation Onderdonk avenue, from Elm street to Stanhope street, 850 feet, was awarded on July 11 by George Cromwell, President Borough of Queens, to the Barber Asphalt Paving Company, 30 Church street, at \$1,618.

The Continental Asphalt Company, 79 Wall street, has been awarded contract for laying sidewalks and paving with asphalt block on a concrete foundation, Academy street, from Freeman avenue to Wilbur avenue, Long Island City, at \$9,315.

Mt. Vernon, N. Y.—Consulting Engineer John M. Farley, White Plains, and Associate Engineer Geo. L. Robinson, awarded contract to J. E. Bunting and Robert Bull & Co. at their joint bid of \$136,000, for the construction of a sewage disposal plant between South Columbus avenue and Hutchinson River.

Newburg, N. Y.—The City Council awarded contract to Warren Bros., 253 Broadway, New York City, at \$44,013.75, for paving North Liberty street, between South street and Le Roy place; paving to be bitulithic outside tracks to the street line, with paving blocks between tracks and 2 feet on outside of same.

Bids were received as follows by the City Council on Aug. 10 for resurfacing North Water street, from the south side of South street to the south side of Broad street, to connect with the paving already done on either end: M. R. Spino, Fishkill Landing, N. Y., Pennsylvania Clay Company brick, \$13,375; Mack brick, \$14,517. M. J. Dwyer, Newburg, Pennsylvania clay, \$13,847; Clearfield clay, \$13,619; Mack brick, \$14,989. Nolan & Horning, Hoboken, N. J., Pennsylvania clay, \$14,167; Mack, \$16,678. John M. Holler, Albany, N. Y., Pennsylvania, \$15,079; Mack, \$15,555; Standard brick, \$15,402. Bulderry Bros., Albany, Pennsylvania, \$15,948; Clearfield, \$15,187; Mack, \$16,252; Cowan's brick, \$14,806. George H. Gifford, Jamaica (L. I.), N. Y., Clearfield, \$16,246; Mack, \$17,238; Pittsburgh-Buffalo Company brick, \$15,628; Shawmut brick, \$16,474. It was decided by the committee to recommend the awarding of the contract to M. R. Spino, at \$13,375, the material used to be Pennsylvania brick.—D. J. Coutant, City Clerk.

New York, N. Y.—The following bids were opened on Aug. 4 at the office of Louis F. Haffen, President Bronx Borough, for repaving with asphalt block and with granite blocks on a concrete foundation Boston road,

from Southern Boulevard to Tremont avenue: (a) Barber Asphalt Paving Company, 30 Church street; (b) Hastings Pavement Company; (c) Asphalt Construction Company, Madison avenue and One Hundred and Thirty-seventh street; (d) Continental Asphalt Paving Company, 42 Broadway: 1,100 square yards new granite block pavement on a concrete foundation, laid with paving cement joints, (a) \$3.19, (b) \$3, (c) \$3.35, (d) \$3.40; 2,570 cubic yards concrete, (a) \$6, (b) \$5.60, (c) \$6.10, (d) \$5.92; 2,000 linear feet new curb, (a) 98 cents, (b) \$1, (c) 95 cents, (d) 99 cents; 2,050 linear feet old curb, re-joined and reset, (a) 38 cents, (b) 45 cents, (c) 38 cents, (d) 42 cents; 290 square feet old bridgestone, re-joined and relaid, (a) 30 cents, (b) 28 cents, (c) 30 cents, (d) 30 cents; 12,065 square yards completed asphalt block pavement, to keep same in repair for five years, (a) \$1.97, (b) \$2.03, (c) \$2.12, (d) \$2.17; 200 cubic yards rock excavation, (a) \$4.50, (b) \$7, (c) \$10, (d) \$3; 5,115 square yards completed asphalt block pavement, not to be kept in repair, (a) \$1.86, (b) \$2.03, (c) \$1.98, (d) \$2.07. Totals, (a) \$55,937, (b) \$56,971, (c) \$59,833, (d) \$59,251.

The Ahearn Construction Company was the lowest bidder, at \$24,000, for erecting a three-story engine house, near West New Brighton, Borough of Richmond.

Niagara Falls, N. Y.—The Board of Public Works awarded contract to H. P. Burgard Company, Gaskin court, for asphalt paving on Cleveland avenue, between Main and Twenty-second streets.—W. D. Robbins, City Engineer.

Rochester, N. Y.—The Board of Contract and Supply, City Hall, relet contract to Paul Elliott, at \$27,352.75, for sewers, grading and cement walks in Driving Park avenue tract.

The Board of Contract and Supply awarded contracts on July 29 for paving as follows: To F. C. Lauer & Sons, 458 South Clinton avenue, with brick, Delaware street, at \$4,255, and Mt. Vernon street, at \$7,300.

Syracuse, N. Y.—In awarding a contract for the construction of a small sewer in Dickerson street the Intercepting Sewer Board Aug. 5 started the first actual construction in connection with the system it was organized to build. Samuel Bonn was the lowest of the seven bidders competing for the job, submitting a proposal of \$1,916.50, which was accepted. The contract covers the building of a 24-inch vitrified pipe sewer for an approximate distance of 1,070 feet along that street. This section will cross Onondaga Creek and be equipped with an interceptor at its junction with the proposed intercepting sewer. This sewer, along with a number of others, for which contracts will soon be let, is to be constructed before the big sewer is begun and before the Onondaga Creek improvement, for which a contract was recently awarded by the Board, is finished, the purpose being not to interfere with either of these larger contracts with the small auxiliary construction. Other bidders for the present sewer contract, together with the amount of their proposals, were: John J. Swift, \$2,348; Albert Gaffey, \$2,198; Charles T. Hookway, \$1,962; Henry Tosh & Son, \$2,712.50; Frank S. Spasato, \$2,697.50, and Alexander Barr, \$2,105.50.

The contracts awarded Aug. 10 were all for concrete sidewalk construction, the low bid in each case being near the low water mark for sidewalk building for the year. The lowest price was bid two weeks ago, when a contract was awarded for 9 cents a square foot, and while none of the bidders yesterday quite reached that figure, all were near it and considering the small size of the awards, the bids were regarded as exceedingly low by the members of the board. For the building of a walk on the north side of Lexington avenue, from Westcott street to Allen street, Albert Gaffey received contract upon proposal of \$0.109 a square foot, or \$356 for job. Other bidders were: Artificial Paving Company, \$396.08; Warren H. Cross, \$452; J. M. Hill, \$438.80, and the Salt City Paving Company, \$440. Mr. Gaffey was given a contract for building a walk on the east side of New Highland street, from Sweeting street to the entrance of Schiller Park, at 0.0999 cents a square foot, or \$134.89 for the job. For competitors he had the Artificial Paving Company, \$155.90; the Salt City Paving Company, \$159.50; Warren B. Cross, \$141, and J. M. Hill, \$153.40.

John Barr submitted the lowest bid of the day with his proposal to build a walk on the west side of Roberts avenue, from Bellevue avenue to Crossett street, for 0.091 cents a square foot, or \$222.95 for the job. The Artificial Paving Company bid \$245; J. M. Hill, \$267.05; Albert Gaffey, \$243.78; the Salt City Paving Company, \$245, and Warren H. Cross, \$268.05.

The contract for constructing a walk on the west side of Allen street, from Lexington avenue to East Fayette street, was awarded to Albert Gaffey at \$0.095 a square foot, or \$146.76 for the job. Other bidders were the Artificial Paving Company, \$168.68; J. M. Hill, \$160.78; the Salt City Paving Company,

\$173.17; Warren H. Cross, \$162.25, and John Barr, \$154.88.

A bid of .099 cents a square foot, of \$128.70, for the laying of a walk on the north side of McAllister avenue, from Salina street to State street, and on the south side of McAllister avenue, from State street to No. 208 McAllister avenue, secured the contract for the Salt City Paving Company, against whom were bidding Albert Gaffey, \$129.35; the Artificial Paving Company, \$130; Warren H. Cross, \$130, and J. M. Hill, \$141.70.

Yonkers, N. Y.—We are officially advised that the Camden Iron Works has been awarded the contract for furnishing and delivering on the public dock here before Oct. 1, 1908, 1,000 lengths of 8-inch B. and S. cast-iron pipe, weighing 625 pounds per length, and 100 lengths of 4-inch pipe, weighing 280 pounds, at \$7.117. Bids were opened on Aug. 17.—James D. McIntyre, Secretary Board.

Cando, N. D.—Simpson & Moore, Bisbee, N. D., have the contract for drilling a 6-inch tubular well for Cando.

East Grand Forks, N. D.—P. McDonnell, Duluth, Minn., has awarded a contract for street paving amounting to the sum of \$161,981. The items of the bid were as follows: 6 manholes, \$50; 18 catchbasins, \$45; 50 false catchbasins, \$30; 220 feet 8-inch lone drain, 50 cents; 500 feet 8-inch connections false catchbasins to catchbasins, 50 cents; 1,200 feet 10-inch connections false catchbasins to catchbasins, 75 cents; 40 feet 12-inch connections false catchbasins to catchbasins, \$1; 60 feet 8-inch connections catchbasin to manhole, 50 cents; 300 feet 10-inch connections catchbasin to manhole, 75 cents; 40 feet 12-inch connections catchbasin to manhole, \$1; 6 cast-iron lids for manholes, No. 125, 3 cents; 6 cast-iron castings for manholes, No. 200, 3 cents; 4 cast-iron castings for top inlet catchbasins, No. 100, 3 cents; 6 cast-iron castings for side inlet catchbasins, each, \$13; 20 cast-iron street mts., No. 50, 5 cents; 2,400 feet stone headers, 50 cents; 4,500 feet straight K. R. stone curb, 70 cents; 500 feet circular K. R. stone curb, \$1.30; 10,300 feet straight or circular stone curb to reset, 20 cents; 900 feet straight or circular cement curb to reset, 52 cents; 300 feet straight or circular cement curb to street, 10 cents; 500 square yards diamond mesh, 36 cents. East of Third street: 1 manhole, \$90; 865 feet curb to reset, 30 cents; 520 feet walk to relay, \$1.50; 48,000 square yards creosote, 3 inches, 20 pounds per cubic foot, \$2.79; 2,500 square yards creosote, 3 inches, 20 pounds per cubic foot, \$3.29; 48,000 square yards creosote, 3 inches, 16 pounds per cubic foot, \$2.72; 2,500 square yards creosote, 3 inches, 16 pounds per cubic foot, \$3.22; 48,000 square yards creosote, 3 1/2 inches, 20 pounds per cubic foot, \$3.02; 2,500 square yards creosote, 3 1/2 inches, 20 pounds per cubic foot, \$3.52; 48,000 square yards creosote, 3 1/2 inches, 16 pounds per cubic foot, \$2.92; 2,500 square yards creosote, 3 1/2 inches, 16 pounds per cubic foot, \$3.42.

Jamestown, N. D.—C. H. Porritt was the lowest bidder, at \$5,670, for laying water mains, at Jamestown.

Bellaire, O.—Contractors Archer & Day, of this city, were awarded the contract for paving eight of the ten streets to be paved at Martins Ferry.

Byesville, O.—The contract for paving Main and Depot streets, bids opened on July 30, has been awarded to Putnam & Price, of Marietta, O., for all work, except the furnishing of the brick for the pavement, at \$13,058. The work includes 3,008 cubic yards excavation, 6,473 linear feet straight curbing, 304 linear feet 10-foot radius curbing, 208 linear feet 5-foot radius curbing, 420 linear feet protection curb, 14 catchbasins, 5 manholes, 415 linear feet 15-inch and 420 linear feet 12-inch sewer pipes, 5,000 linear feet 4-inch tiling and laying 10,024 square yards of brick paving.

The Noble Brick Company, of Glenwood, O., secured the contract for furnishing the brick, about 10,024 square yards, at \$6,014.—O. M. Hoge, of Cambridge, O., Engineer.

Cincinnati, O.—The Board of Public Service has awarded the following contracts for paving with wood blocks: Cross lane, Thomas Strack, at \$5,680; Erkenbrocher avenue, Thomas Strack, at \$37,205.80.

Cuyahoga Falls, O.—The following contracts have been awarded by the Board of Public Affairs for rebuilding the municipal electric light plant: For the generator, exciter and switchboard, to the Crocker-Wheeler Company, Ampere, N. J., and for the new engine to the Shepard Engine Company, of Williamsport, Pa.

Jefferson, O.—The Ashtabula County Commissioners accepted the bid of the Riverside Bridge Company, Cleveland, at \$1,250, for the construction of a steel bridge, over Rock Creek, between New Lyme station and Dodgeville. Wilson & Wiswell, Cleveland, were given the contract for concrete work, at \$885. Riley Johnson, Ashtabula, O., will build an extension to the Satin street concrete bridge, at Jefferson.

Lima, O.—S. A. Hoskins, Chairman Lima State Hospital Board, has awarded to Julius

Fetter the sewer contract for the Lima State Hospital; sewer is 7,000 feet long, and plans were made by County Engineer Chas. E. Craig.

Martins Ferry, O.—The Board of Public Service has awarded the Jefferson street paving to Dixon & Pickett; Madison street, to Archer & Day, and Monroe street, to Archer & Day; Indiana street, to George B. Clifford. The American Sewer Pipe Company has the paving contract, but Mack brick was selected. The contract for drilling for the twenty water wells above the pumping station was awarded to the Ohio Drilling Company, of Massillon, and the work of laying the suction pipe to Newton Talbott.

Oakley, O.—A contract was let Aug. 13 to John W. Shields & Bro., Cincinnati, O., for Williams avenue curb and gutter, 2,700 linear feet; also for macadam and grading for a width of 20 inches outward from gutter and two Palmer inlets, and rolling 170 cubic yards, \$2,133.10. Contract for Taylor avenue was let to J. E. Gorman, of Madisonville, O., for grading 3,400 cubic yards and macadamizing, relaying 4-inch water main a distance of 300 feet and cement curb and gutter 2,000 linear feet, cement crossings 60 linear feet, and rolling 92,000 square yards; total amount, \$4,176.50.—Oscar Koscher, Clerk.

Springfield, O.—The contract for the big Indian Run intercepting sewer has been awarded to Huenker & Williams at their bid of \$37,696. The contract for paving the first alley north of Main street went to H. J. Hanoly at his bid of \$991.

Toledo, O.—The Board of Public Service has entered into a contract with the Riggs & Sherman Company, Consulting Engineers, of Toledo, whereby the company will furnish a sanitary engineer to make an investigation looking towards providing a better municipal water supply.

Wapakoneta, O.—After practically an all-night's session the Council has awarded the contract for the paving of Pearl street to the J. E. Connolly Company of Dayton at their bid of \$49,420.04 for gravel concrete and trimble block.

Woodfield, O.—Charles Berry has been awarded a contract for setting new curbing at 45 cents per linear foot and for brick paving at \$1.30 a square yard. Another bid was Chas. Bungbacher, \$1.33 per square yard.

Wren, O.—The contract for the erection of the new school building has been awarded to Mann & Christen, of Decatur; the cost of the building will be \$12,000.

Bethlehem, Pa.—The Joint Board of Commissioners of Northampton and Lehigh Counties let contract to Cramp & Co., Philadelphia, at \$104,000, for a reinforced concrete arch bridge over the Monocacy Creek, at Broad street, Bethlehem.—N. G. Crosby, Clerk, Easton, Pa.

Canonsburg, Pa.—The bids submitted for the improvement of Ridge avenue, as tabulated by Borough Engineer J. M. Farmer, were as follows: John McNary, Canonsburg, \$8,105; Sawders Company, Pittsburg, \$8,110; Taylor & Crawford, Canonsburg, \$8,195; Joseph McKenna, Canonsburg, \$8,905. After considerable discussion it was resolved, on motion of McNary, to use the Toronto wire cut brick and a concrete combination curb and water table. On motion of McNary, it was decided to award the contract to John McNary, who was the lowest bidder on the materials above mentioned.

Dunmore, Pa.—The Engineering and Construction Company, of Scranton, Pa., has secured the contract for a sewer in Quincey avenue.

Erie, Pa.—Bids were received Aug. 8 for repairing French street. Mayer Bros. were the only bidders, at \$1.82 for asphalt top, 65 cents for artificial curb, 15 cents a foot for resetting old curb, \$5.50 per cubic yard for necessary concrete base, \$60 apiece for manholes, and \$50 each for catchbasins.

Pittsburg, Pa.—Competition among contractors for city work is the keenest it has been for many years. This was shown recently when 42 contracts for street and sewer improvements were let by Mayor Guthrie and Public Works Director Shepherd. The total estimated cost of the improvements as figured by City Engineers was \$279,700, while the contracts were awarded for \$53,186 under that sum. In some instances the bid accepted was only half the estimated cost. Bids are submitted for units of work and City Engineers always make an allowance for extra grading, excavation, etc., so the estimated cost is naturally above the lump sum of the bid, but rarely is the discrepancy so great. Among the more important street improvements was the grading, paving and curbing of Forward avenue, awarded to Booth & Flinn for \$67,558.95. The estimated cost was \$99,200. Paving and curbing of Lemington avenue was awarded to M. O'Herron & Company for \$26,703.90, which was approximately \$20,000 under the estimated cost. The Barber Asphalt Company got the contract for paving and curbing Reynolds street for \$45,081.55.

Cecil alley is to be graded and paved with

wood block by Booth & Flinn for \$4,060.65. Craig street, between Forbes street and Fifth avenue, which is to be widened to 60 feet, will be graded, paved and curbed by Booth & Flinn for \$9,605.18. A contract to lay a cement walk around Lake Elizabeth, Northside, was let to J. Guy Smith for \$2,837.10.

Mayor Guthrie let the contract for printing 1,000 copies of the city digest to the Market Review Publishing Company, of this city, at \$1.35 a page. The book will contain about 1,000 pages, so the printing will amount to about \$1,350.

The County Commissioners on Aug. 4 awarded contracts for constructing the following roads: Monroeville and Pitcairn connecting road, to the McLaughlin Construction Company, \$15,583; Millers Grove and Clairton road, to W. W. Kelly, 502 Fifth avenue, Pittsburg, \$11,400; to Collins-Gordon Company, 407 Fourth avenue, Pittsburg, contracts were awarded for the Boughton and Cochrane road, at \$45,903; the Monroeville and Trestle road, at \$48,055, and the Brighton and Library connecting road at \$32,192.—G. T. Barnsley, County Road Engineer.

Waynesburg, Pa.—The contract for paving with brick about 11,000 square yards, bids opened on Aug. 5, has been awarded to the Hallam Construction Company, of Washington, Pa., at \$30,000.—W. H. Sutton, Borough Secretary.

Wilkes-Barre, Pa.—Jacobsky & Durkin were the lowest bidders, at \$1,840, for the construction of a bridge over Toby's Creek, in Kingstown township.

Knoxville, Tenn.—Engert & House were awarded the contract for building an 8-inch sewer lateral from the First Creek main sewer extension, in the rear of Grainger and Leonard streets, at the price of 47 cents per linear foot, by the Board of Public Works last week. Five firms bid, the price ranging from 47 cents to 62 cents per linear foot.

Humboldt, Tenn.—The Board of Public Works has awarded contracts for equipment for the municipal electric light plant as follows: To the Chuse Engine and Manufacturing Company, Mattoon, Ill., for one 250-h.p. engine; also a 150-kw., 60-cycle, 3-phase, 2,200-volt engine type generator.—W. A. Moore, Superintendent.

Provo, Utah.—Davis & Johnson have been awarded the contract for the excavation work in connection with the new Federal building in this city.

Portsmouth, Va.—The Board of Control let contract to the Denby Contracting Company, Norfolk, Va., for excavating and grading about 20,000 cubic yards of roadways and slopes at Forest Lawn Cemetery.

Olympia, Wash.—The contract for paving on Fourth and Columbia streets, bids opened on Aug. 3, has been awarded to the Lister Construction Company, of Tacoma, Wash., at \$3.56 per square yard for vitrified brick and \$3.66 per square yard for creosoted wooden blocks, the work including about 7,500 square yards of pavement.—Millard Lemon, City Engineer.

Seattle, Wash.—The Seattle Electric Company has been awarded contract for furnishing electric current for lighting and power for the Alaska-Yukon-Pacific Exposition.—H. F. Grant, Manager.

R. H. Thomson, City Engineer, has reported the estimated cost of the following improvements: Occidental avenue and other streets, filling, \$12,500; alley in Block 12, Capitol Hill addition, paving, \$3,300; Fourteenth avenue West and other streets, concrete walks, \$8,342.

Tacoma, Wash.—Only one bid was received by the Commissioner of Public Works for power to operate the 450-h.p. motor at Station C. This bid was by the Seattle-Tacoma Power Company at 20 cents per horsepower, based on the peak load each month.

P. J. Concannon was awarded the contract for grading and laying sidewalks on Seventeenth street, between Sheridan and Ainsworth avenues, at \$2,950. The estimate was \$3,541.

Erickson & Oquist were awarded the contract for putting in sidewalks on North Twenty-third street, between Steele and Elfe, and on Elfe, between Nineteenth and Twenty-third, for \$784. The estimate was \$892.

Racine, Wis.—Hans C. Hanson has the contract for constructing sewers in Carlisle avenue and Charles street.

L. J. Shoenleben was awarded the contract for putting in water service on Washington avenue, and H. Raymond for putting in water and sewer service on Ninth street.—P. H. Connolly, City Engineer.

The Milwaukee Bridge Company was awarded the contract for rebuilding the Sixth street viaduct.—P. H. Connolly, City Engineer.

Two Rivers, Wis.—Walter O. Bahr has the contract for constructing sewers.

Ottawa, Ont.—The contract for the construction of a dam above the Chaudiere Falls, to increase the water power, has been let to Quinlan & Robertson, contractors, of Montreal, at \$250,000.

NEWS OF THE SOCIETIES

League of Virginia Municipalities.

With delegates present from Richmond, Charlottesville, Emporia, Roanoke, Wakefield, Cape Charles, Farmville, Franklin, Staunton and Norfolk, the League of Virginia Municipalities opened its fourth annual convention at 8 p.m. Aug. 13, in the Pythian Castle, at Court and County streets, Portsmouth, Va. President Joel H. Cutchin, Mayor of Roanoke, presided and introduced President M. C. Corbitt of the Portsmouth Common Council, who welcomed the members of the League. C. E. Ashburner, general manager of Staunton, responded for the League. Briefly, he stated that the object of the meeting was "to find out what the other fellow has got that we haven't got, what he has got better than ours, and improve our conditions accordingly." Dr. E. G. Williams, Health Commissioner of the State, spoke on the "Public Health." Other addresses were: "Municipal Financing," by ex-Mayor Carlton McCarthy, of Richmond; "The Police Force—Its Power and Its Functions," by Hon. W. H. Landes, Mayor of Staunton; "Good Government and How to Obtain It," by Hon. James G. Riddich, Mayor of Norfolk; "City and Civil Service," by Professor J. H. Dillard, of Tulane University, who is also president of the New Orleans Public Library; "Uniform Health Reports," by Dr. Joseph Given, of Portsmouth; "Civic Responsibility," by Lieutenant Charles P. Shaw, U.S.N. The Lieutenant introduced a resolution which called for active work on the part of the members of the League, looking to the election of State Legislators who will pledge themselves to vote for an amendment to the Constitution of the State which will permit cities to adopt a plan of government more efficient, more economical and business-like, as well as more democratic than it is possible to secure at present.

Mayor C. C. Vaughan, of Franklin, introduced the following set of resolutions, which also went to the Committee on Legislation:

"Whereas, Taxation in the State of Virginia is not equally nor equitably distributed; and

"Whereas, Our laws provide no method for the equalization of taxes; and

"Whereas, After January 1, 1913, the Legislature can segregate for the purpose of taxation the several kinds or classes of property, so as to specify and determine upon what subjects State taxes and upon what subjects local taxes may be levied; and

"Whereas, the class or kind of property that may be segregated for taxation for State purposes is a matter of deep concern to all of the municipalities in the State, requiring the best thought and consideration of intelligent men,

"Resolved, That the League of Virginia Municipalities favors such amendments to the present laws that will better provide for equal and equitable taxation by segregating certain property for State taxes or by some other method.

"Resolved, That the Secretary of the League request each and every commissioner of the revenue, mayor and president of council in the State to inform him prior to the next meeting of the League what kinds or classes of property they would suggest be segregated for State taxation, or what other

method of tax equalization they would recommend."

Officers for the following year were elected as follows: Mayor J. Davis Reed, Portsmouth, president; Luther C. Brinson, Portsmouth, secretary; C. E. Ashburner, Staunton, L. B. Davis, Roanoke, C. C. Vaughan, Franklin, vice-presidents. Staunton was chosen as the next meeting place.

Membership fees were abolished upon recommendation of Mayor Cutchin, who made a motion calling for this amendment to the by-laws of the League. This, it is believed, will be an incentive to every city in the State to become a member of the organization.

At the conclusion of the convention the delegates departed for Ocean View, where they spent the evening as the guests of the city, enjoying a banquet.

The visiting delegates were: Carlton McCarthy, Mayor of Richmond; E. G. Hayden, of Charlottesville; J. E. Everette, Mayor of Emporia; Joel H. Cutchin, Mayor of Roanoke; L. B. Davis, of Roanoke; S. V. Watkins, of Wakefield; M. H. Stephenson, of Cape Charles; Dr. W. E. Anderson, of Farmville; C. C. Vaughan, Mayor of Franklin; J. A. Page, of Roanoke; J. E. Howell, of Franklin, and C. E. Ashburner, of Staunton.

League of Missouri Municipalities.

The Webb City Commercial Club, of Webb City, Mo., has been instrumental in bringing about an agreement for a meeting of representatives of Missouri cities at Kansas City, September 22, for the purpose of forming a Municipal League. The announcement is signed by L. E. Bates, W. R. Robertson and Frank A. Funk, a committee of the club, and reads as follows:

"A short time ago the Webb City Commercial Club caused a letter to be sent out by the committee to all other cities of the third class in the State of Missouri. This letter set forth some of the evil effects of the laws of special taxation as they now exist in cities of this class. It proposed a meeting of representatives from these cities at some convenient point in the State to consider the advisability of changes in the laws applicable to these cities. There has been received a large number of replies from the letters. It is noted from the replies that the suggested meeting is met with favor. The fact that one should be held is now beyond question.

"Since some one must take the initiative, and since the Webb City Commercial Club has already been in correspondence with other clubs in regard to the proposed meeting, it takes the liberty of calling a meeting for September 22, 1908, to be held in the Commercial Club rooms, Board of Trade Building, Kansas City, Mo. Kansas City has been selected as the most suitable place for the meeting because of its railroad and library facilities. The Kansas City Club has very kindly extended the free use of its rooms for a meeting of this character and has offered to cooperate in making the meeting a success.

"The original purpose in proposing this meeting was to discuss and recommend any needed legislation on Special Taxation for Municipal Improvements. But the committee, after considerable thought, has decided that a very important preliminary matter should be taken up first, viz., the organization of a permanent Municipal League. At present there is none. If there were such a league in existence for the purpose of taking up and discussing legis-

lation and other questions concerning the betterment of our cities, there is no doubt in the minds of the committee but that good would result therefrom. Hasty and ill-advised legislation would be prevented. The present laws would be better understood. Each city would be stimulated to make improvements that it finds are being made in other cities. New ideas would be gathered by the representatives that could be carried back to the places they represent.

"It is, then, the formation of a permanent Municipal League that this meeting is especially called for on the 22d of September. The formation of the league is a matter of organization only. The question of special taxation will be taken up. The evil effects growing out of the existing laws will be thoroughly discussed. Plans for remedying them will be evolved.

"It is suggested by the committee that the Mayor and City Engineer of each city of the third class in Missouri be delegates to this meeting by virtue of the offices they hold, and that the Commercial Club, or similar organization, in each city send at least three other delegates."

Calendar of Meetings

September 8-12.

Playground Association of America.—Second annual congress, New York City.—Dr. Luther Halsey Gulick, President, 624 Madison avenue, New York City.

September 15-17.

Central Water Works Association.—Twelfth Annual Convention, Pittsburg, Pa.

September 17-20.

League of Iowa Municipalities.—Ottumwa, Ia.

September 21-October 12.

National Association for the Study and Prevention of Tuberculosis.—International Congress, Washington, D. C.—Dr. Henry Barton Jacobs, Secretary, Baltimore, Md.—Dr. Joseph Walsh, Philadelphia, Pa. Special Secretary of the Committee on the International Congress.

September 22-24.

National Association of Comptrollers and Accounting Officers.—Third annual convention, Seelbach Hotel, Louisville, Ky.—Howard C. Beck, Secretary, 61 McGraw Building, Detroit, Mich.

September 23-25.

New England Water Works Association.—Annual convention, Atlantic City, N. J.—Willard Kent, Secretary, Narragansett Pier, R. I.

September 30-October 2.

League of American Municipalities.—Twelfth annual convention, Omaha, Neb.—John MacVicar, Secretary, Des Moines, Ia.

September 29-30.

American Public Works Association.—Annual meeting, Asheville, N. C.

September.

New Jersey State Firemen's Association.—Annual meeting, Atlantic City, N. J.—William Exall, Secretary, 11 Howard street, Newark, N. J.

October 5-6.

Illuminating Engineering Society.—Second Annual Session, Hotel Walton, Philadelphia, Pa.

October 11.

International Roads Congress.—First convention, Paris, France.—President Letthier, l'Inspecteur General des Ponts et Chaussees.

October 12-17.

American Street and Interurban Railway Association.—Twenty-seventh annual meeting, Atlantic City, N. J.

October 20-23.

American Society of Municipal Improvements.—Fifteenth annual convention, Hotel Dennis, Atlantic City, N. J.—A. Prescott Folwell, Secretary, 239 West Thirty-ninth street, New York City.

National Municipal League.—Annual meeting, Pittsburg, Pa.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

November 17-20.

American Civic Association.—Annual Meeting, Pittsburg, Pa.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

December 4-5.

New Jersey State Sanitary Association.—Annual Meeting, Lakewood, N. J.—John B. Smith, Chairman, New Brunswick, N. J.

PERSONALS

BEAUFORT, ZOTIQUE, Montreal, Canada, for twenty years Chief of the Fire Department, will retire on the last day of October next. He is entitled to a pension of \$1,750 per annum. It is expected that Mr. Tremblay, deputy-chief of the department, will succeed Mr. Beaufort as Chief.

BLUME, HENRY, Monaco, Pa., has been elected a member of the Board of Health.

DIMMICK, J. BENJAMIN, Scranton, Pa., Mayor, has recently visited Newport, R. I., to inspect the garbage disposal plant operated by Lewis & Kitchen.

FISK, CHARLES J., Plainfield, N. J., has announced his willingness to serve another term as Mayor.

GLORE, WILLIAM H., Salt Lake City, Utah, has been elected Chief of the Fire Department. Mr. Glore was Chief of the Fire Department of Covington, Ky., from 1876 to 1888, and Superintendent of Water Works in that city from 1888 to 1905. He came to Salt Lake to live in February of 1907.

MAHOLL, J. BARRY, Baltimore, Md., Mayor of, together with City Comptroller Henry F. Hooker, City Register J. Sewell Thomas and City Engineer Fendall, recently visited Newark, N. J., to look over the bitulithic paving. They were shown over the city by Chief Engineer Morris Sherrerd.

MALONE, JAMES H., Memphis, Tenn., Mayor, is visiting Mexico and Central American countries. During his absence vice-Mayor John T. Walsh is at the head of the city government.

WILLIAMS, BENEZETTE, New York City, Consulting Engineer, has been engaged by the Council Bluffs City Water Works Company to represent it in the negotiations pending with the city.

WRIGHT, M. F., Butler, Pa., Superintendent of the Butler Water Company, has recently resigned.

PATENT CLAIMS

895,201. Street-Cleaning Machine. Felix Rogowski, Chicago, Ill. Serial No. 417,444.

In a street cleaning machine, the combination of a wagon body, wheels and axles thereto on which the body is mounted, the wheels on the rear axle constituting the driving wheels of the machine, an engine mounted on the wagon body, a connection between such engine and the driving wheels, means to throw such connection into and out of operative relation with the driving wheels, a rotatable shaft, gear and sprocket wheels on the shaft, a connection between the shaft and the engine, means to throw such connection into and out of operative relation with the shaft, rotatable brushes arranged diagonally to the axles of the machine, journal bearings for such brushes, gear wheels on the rotatable brushes arranged to intermesh with the gear wheels on the rotatable shaft so that one of such brushes will rotate in one direction and the other in the opposite direction, an apron, a runway extending backward and upward from the rear end of the apron, an elevator in the runway, such elevator extending over the sprocket wheels on the rotatable shaft, shafts rotatably mounted on the wagon body, means to turn the shafts, chains attached to the journal bearings of the brushes and of the rotatable shaft and to the shafts on the wagon body, respectively.

895,229. Method of Treating Sewage. Cecil C. E. Beddoes, Wallingford, Pa. Serial No. 424,080.

The herein-described process of treating sewage for the purpose of supplying the same with oxygen to support bacteria which consists in supplying air or gas to the sewage and subjecting the sewage and air or gas to pressure at the same time.

No. 895,230. Excavating Apparatus. Lorenzo Bree, Chicago, Ill., assignor to Robert P. Dunston, Hancock, Mich. Serial No. 339,619.

In an excavating machine, the combination of an excavating wheel, an apron at the side thereof to receive the spoils, and an excavating bucket having a discharge opening controlled by a door and adapted to discharge the contents of the bucket onto said apron.

TRADE NOTES

Cast-iron Pipe.—Chicago: Market quiet; only small current orders received. Quotations: 4-inch, \$27; 6 to 12-inch, \$26; 16-inch and up, \$25. San Francisco: Just now inquiries for pipe are infrequent. Quotations: 4-inch, \$34.50; 6-inch, \$33.50; 10 and 12-inch, \$33. Birmingham: One large order of 1,000 tons and several ranging from 200 to 600 tons have been booked recently. Prices are generally considered firmer, but no change is authorized. Quotations: 4 to 6-inch, \$23; 8 to 12-inch, \$22; over 12-inch, average \$21. New York: Business has improved in the last month, but is quiet just now. Quotations: Carload lots of 6-inch, \$23.50 to \$24.50.

Heaters.—The Rockwell Furnace Company, 26 Cortlandt street, New York City, not the Rockwell Heater Company, are the manufacturers of the portable heating appliances described on page 261 of the MUNICIPAL JOURNAL AND ENGINEER for August 19.

Automatic Fenders.—Articles of incorporation have been filed in a few days with the Secretary of State for the formation of the American Automatic Fender Company, to be capitalized at \$500,000. Local business men have been instrumental in founding the company, which will engage in the manufacture of fenders for street cars and pilots for locomotives. F. A. Nelson, of Minneapolis, is the designer of the patents, and has at present a factory on High street, which will be engaged, he states, in the making of fenders to be used in demonstrating their worth in large cities of the United States. He left last night for the East, where he will demonstrate his patent before several public service commissions. It has also been announced that a subsidiary company has been organized in Los Angeles, Cal., with a capital of \$250,000, to manufacture the patent for the Western trade.

Garbage Wagons.—The Haywood Wagon Company, Baldwinsville, N. Y., have recently been awarded the following municipal contracts: By the city of Scranton, Pa., dry garbage wagons; Auburn, N. Y., wet garbage wagons. They have also been awarded the contract for furnishing the Penn Construction Co., of Harrisburg, Pa., who hold the city garbage contract, both wet and dry garbage wagons.

Civil Service Examinations

Testing Engineer.—The United States Civil Service Commission announces an examination, September 16, to fill a vacancy in the position of timber testing engineer in the Philippine Forestry Service, at \$1,800 per annum. Application Forms 2 and 375.

Civil Engineer and Superintendent of Construction.—The United States Civil Service Commission announces an examination, September 9-10, to fill a vacancy in the position of civil engineer and superintendent of construction, at \$1,500 per annum, in the Quartermaster's Department at Large, New London, Conn., and other vacancies as they occur. Application Form 1312.

Engineer in Wood Preservation.—The United States Civil Service Commission announces an examination, September 2, to fill about eight vacancies in the Forest Service Department of Agriculture, at an entrance salary of \$1,000 per annum. Application Form 1,312.

SPECIAL NOTICE

The City of Tyler, Texas, presents an inviting field for a Street Railway. Anyone interested in that line would do well to write the Mayor. Correspondence Solicited. (9-10-11-12-13) Jno. H. Bonner, Mayor.

PROPOSALS

GARBAGE COLLECTION AND REMOVAL

Youngstown, Ohio.
The Board of Health of the City of Youngstown, Ohio, will receive, until 12 o'clock noon, August 29, 1908, sealed bids for the collection and removal of garbage in said city for a period of five years. For full details, address Dr. H. E. Welch, Health Officer. The right to reject any or all bids reserved. (5-6-7-8-9)

STANDPIPE

Sealed proposals for constructing a steel standpipe in the Town of Manchester, Mass., 60 feet in diameter and 70 feet high, will be received at the office of the Board of Water Commissioners of the said town, in the Town Hall Building, until 8 P. M. Friday evening, September 4th, 1908, and then and there publicly opened and read.

Proposals should be addressed to the said Board and endorsed "Proposal for Constructing Standpipe on Moses Hill," and should be accompanied by a certified check payable to the order of the town of Manchester as a surety that if the proposal is accepted the contract will be entered into.

Plans and specifications and other information may be obtained from the Engineer, Raymond C. Allen, Manchester, Mass.

The Board of Water Commissioners reserve the right to reject any or all bids, or to accept any bid should it, in their opinion and judgment, be for the best interest of the Town of Manchester so to do.

F. J. MERRILL,
Chairman, Board of Water Commissioners.
RAYMOND C. ALLEN,
Engineer.

PUMP

Muskegon, Mich.

Sealed bids will be received up to twelve o'clock noon, September 8, 1908, by B. H. Tellman, City Recorder, Muskegon, Mich., for a vertical pump of six million (6,000,000) gallon capacity in twenty-four (24) hours, to be installed at the Water Works at the Lake Michigan Pumping Station; general specifications of same are on file; copy of same will be mailed on request of bidders.

Each bidder to furnish specifications of his pump and bid in detail, and the total cost of installing the same.

The city reserves the right to reject any and all bids.

BENJ. H. TELLMAN,
Recorder.

TO PAVING CONTRACTORS

Dublin, Ga.

Sealed proposals on blank forms furnished by the city and addressed to the Mayor and Board of Councilmen, Dublin, Ga., will be received until 8 o'clock P. M., September 3d, 1908, for furnishing all material and labor for the following work:

Approximately:

17,200 square yards of street paving (vitri-fied brick, wood block or bitulithic will be considered) with necessary granite curb as specified.

Each bid must be accompanied by a certified check, made payable to the Mayor for twelve hundred dollars (\$1,200).

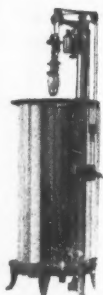
The right is reserved to reject any or all bids.

Plans and specifications can be seen at the office of the City Clerk of Dublin, Ga., and specifications will be mailed upon application to the engineers.

W. S. PHILLIPS, Mayor.
E. D. WHITE, JR., CLERK.

Engineers:
H. S. Jaudon & Goss, Box 582, Savannah, Ga.

BUCKEYE ELECTRIC BLUE PRINTING MACHINES



"The Sun That Never Sets"

Equipped with

A. B. Photo Engraving Arc Lamp, Non-combustible Controller.

Ball Bearing Curtain Rollers. Perfect Contact Arrangement.

Automatic Shaft Governor for Controlling Speed of Lamp Travel.

"Highest in Efficiency, Lowest in Price"

Buckeye Engine Company, Salem, Ohio

HIGH GRADES of

Natural Asphalt

The A. L. Barber Asphalt Company
90 West Street, New York

Marwick, Mitchell & Co.

CHARTERED ACCOUNTANTS

General Offices: 79 Wall Street, New York

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995 Drexel Bldg.

PITTSBURG
248 Fourth Avenue

CHICAGO
189 La Salle Street.

MINNEAPOLIS
700 Temple Court

ST. PAUL
207 Dispatch Bldg.

INDIANAPOLIS
326 American Central
Life Building

LONDON, ENG.
18 Bishopgate Street

GLASGOW, SCOTLAND
41 St. Vincent Place

WINNIPEG, CANADA
19 Canadian Northern
Building

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ALL COUNT

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Single street signs, sign posts, sign brackets

All from perforated sheet metal or in solid raised letters. We take contracts with municipalities to erect their work.

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Steel Body Trucks and Carts

are right in every particular. See full page ad. issue March 4th. Description and full information on request.

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622 West 47th Street, New York City